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ABSTRACT

This report presents a summary of the 1990-91 results of the national Survey of Earned Doctorates conducted each year since 1958. Organized into three sections, the report first presents an analysis of trends in the numbers of doctorate recipients including data with regard to doctoral fields, gender, citizenship status, race and ethnicity, time-to-degree, and post-graduation plans. A second section on financial supports examines primary sources of support (personal, university, federal or other) and indebtedness (by gender, citizenship status and race). The final section discusses the increasing participation of women in U.S. doctoral education, with attention to trends in numbers and proportions of doctorates, fields of doctorate, degree-granting institutions, sources of support (personal, university, federal, debt), postdoctoral plans, and employment sector. Four appendixes present basic tables, trend tables for 1981 to 1991, technical notes, and the survey instrument. (JB)

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Summary Report 1991

Doctorate Recipients from United States Universities

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Summary Report 1991

Doctorate Recipients from United States Universities

The Survey of Earned Doctorates is conducted
for the following agencies of the U.S. government:
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NOTICE: The project that is the subject of this report was approved by the Governing Board of the National Research Council, whose members are drawn from the councils of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. The survey project is part of the program of the Office of Scientific and Engineering Personnel (OSEP).

This report has been reviewed by a group of persons other than the author according to procedures approved by a Report Review Committee consisting of members of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

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This report is based on research conducted by OSEP with the support of the National Science Foundation (NSF), the National Institutes of Health (NIH), the National Endowment for the Humanities (NEH), the U.S. Department of Education (U.S. Dept. of Ed.), and the U.S. Department of Agriculture (USDA) under NSF Contract No. SRS-8517008. Opinions, findings, conclusions, or recommendations expressed in this publication are those of OSEP and do not necessarily reflect the views of the sponsoring agencies.

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PREFACE AND ACKNOWLEDGMENTS

This report presents a summary of the results of the 1990-91 Survey of Earned Doctorates (SED), which has been conducted each year since 1958 by the National Research Council's Office of Scientific and Engineering Personnel (OSEP) and its predecessor organizations. Questionnaires, distributed with the cooperation of the graduate deans of U.S. universities, are filled in by graduates as they complete requirements for their doctoral degrees. The doctorates are reported by academic year (from July 1 of one year through June 30 of the following year) and include research and applied-research doctorates in all fields. Professional degrees such as the M.D., D.D.S., O.D., D.V.M., and J.D. are not covered by this survey. A full list of included degrees can be found inside the back cover. For convenience throughout this report, "Ph.D." is used to represent any of the doctoral degrees covered by the survey.

This *Summary Report* is the twenty-fifth in an annual series of reports that began in 1967. Trend data from earlier periods can be found in the book *A Century of Doctorates: Data Analyses of Growth and Change* (National Academy of Sciences, 1978). All survey responses become part of the Doctorate Records File (DRF), a virtually complete data bank on doctorate recipients from 1920 to 1991. More than 85 percent of the 1,024,487 records now in the DRF have come from results of the 1958-1990 surveys. For doctorates granted during the 1920-1957 period, information was compiled from commencement bulletins, registrars' records, and other published material.

The conduct of the SED, the maintenance of the resulting data file, and the publication of this report are funded jointly by the National Science Foundation (NSF), the National Institutes of Health (NIH), the National Endowment for the Humanities (NEH), the U.S. Department of Education (U.S. Dept. of Ed.), and the U.S. Department of Agriculture (USDA). Susan Hill (NSF) serves as the project officer for the agencies, and her counsel is appreciated. In addition, constructive reviews of the design and analysis of the survey by Mary Golladay (NSF), David Chananie (NIH), Jeffrey Thomas (NEH), Linda Zimbler and Nancy Schantz (U.S. Dept. of Ed.), and K. Jane Coulter and Charles Baldwin (USDA) increased the survey's relevance to national policy issues. We also express deep appreciation to the graduate deans in the doctorate-granting institutions for their continuing interest in and assistance to this project. It is through their cooperation that the DRF continues to serve as a useful resource for monitoring developments in graduate education in the country.

The 1990-91 Survey of Earned Doctorates was conducted under the administrative supervision of Joanne M. Weinman. Paula Ries, Ms. Weinman's successor as project manager, and Delores H. Thurgood collaborated on the development of this report. Ms. Ries analyzed the survey results and drafted all text in the body of the report. Ms. Thurgood drafted the technical notes, supervised the production of tables and figures, and reviewed the manuscript for accuracy. George Orvis generated much of the data used in the report from the Doctorate Records File and also verified the accuracy of the explanatory and technical notes in the appendixes. Julie Clarke produced the camera-ready copies of all tables and figures presented in the body of the report and assisted in the verification of numbers and percentages contained therein. Martha Bohman prepared all appendix tables and finalized the manuscript for publication. Special appreciation is also expressed to the following people: Eileen Milner, who supervised the coding and editing of the data, and her staff who provided proficient support in the collection and processing of the survey: Walter Fox, Abraham Gedamu, John Hines, and Mary Wanyoike. Thanks are also expressed to George Boyce, manager of OSEP's Data Processing Section, and to Joseph Finan and Maren Herman, who were responsible for the computer programming and processing.

The work of this project was overseen by the Advisory Committee for Studies and Analyses of the Office of Scientific and Engineering Personnel, which is concerned with those activities of the National Research Council that contribute to the effective development and utilization of the nation's scholars and research personnel. During the development of this report, Alan E. Fechter, Executive Director of OSEP, provided helpful guidance, as did Pamela Ebert Flattau, who served as OSEP's Director of Studies and Surveys. Suggestions for improvement of the content or format of the report, other comments, and questions are welcome and may be directed to the Project Manager, Paula Ries.

Linda Wilson, Chair
Office of Scientific and Engineering Personnel
Advisory Committee on Studies and Analyses

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INTRODUCTION

Summary Report 1991 is the 25th in a series of reports on doctorates awarded by U.S. colleges and universities. Like its predecessors, it presents trends in doctorate production in the United States, describing the broad fields in which Ph.D.s are earned and the general demographic characteristics of doctorate recipients. *Summary Report 1991* differs noticeably in format from its most recent predecessors. Selected trend data are presented in tables and charts along with a brief narrative describing key findings.

The special analysis section profiles the 1991 cohort of U.S. female Ph.D.s. Supplementary tables on 1991 doctorates are displayed in Appendix A, and 1981-1991 data are presented in Appendix B. Technical notes are in Appendix C, and the survey questionnaire is included in Appendix D.

Seven broad fields are profiled in the text of Summary Reports. Readers should note that these fields may differ from those reported by federal sponsors of the survey. "Major" fields are the subfields that make up the broad fields (e.g., biological sciences as a part of life sciences or psychology as a part of social sciences). For a list of these subfields, see the inside back cover of this report and the specialties list in Appendix D.

***** IMPORTANT NOTICE *****

Because of recent increases in response rates, the data on citizenship and race/ethnicity for 1990 and 1991 are not comparable to data for earlier years.

Although the Survey of Earned Doctorates maintains an unusually high response rate, the percentage of self-reported questionnaires declined throughout the 1980s, falling from 96.2 percent in 1980 to a low of 91.4 percent in 1989. This downward trend was reversed in 1990 when the response rate increased nearly two percentage points. It rose yet another point in 1991, reaching 94.3 percent.

Item response rates showed a parallel improvement—a natural consequence of the increase in the overall survey response but also partially because of questionnaire revisions and follow-ups for missing pieces of information. New follow-up procedures instituted in 1990 had an especially strong impact on citizenship and racial/ethnic data for that year. However, since the responses to the follow-ups were not received until *after* closure of the 1990 survey, they were not included in the data presented in *Summary Report 1990*. The updated 1990 numbers reflecting follow-up responses are shown in Appendix Table B-2 in this year's report (page 98). The most significant adjustment was to the numbers of black Ph.D.s—an increase of 8.3 percent among those who were U.S. citizens and 4.7 percent among temporary residents. The data for 1991 will likewise be subject to some revision over the next year. It is important, therefore, for readers to keep in mind that fluctuations in response rates affect numerical trends and that 1990 and 1991 data on citizenship and race/ethnicity, in particular, are not comparable to earlier data.

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TRENDS IN DOCTORATE RECIPIENT PRODUCTION

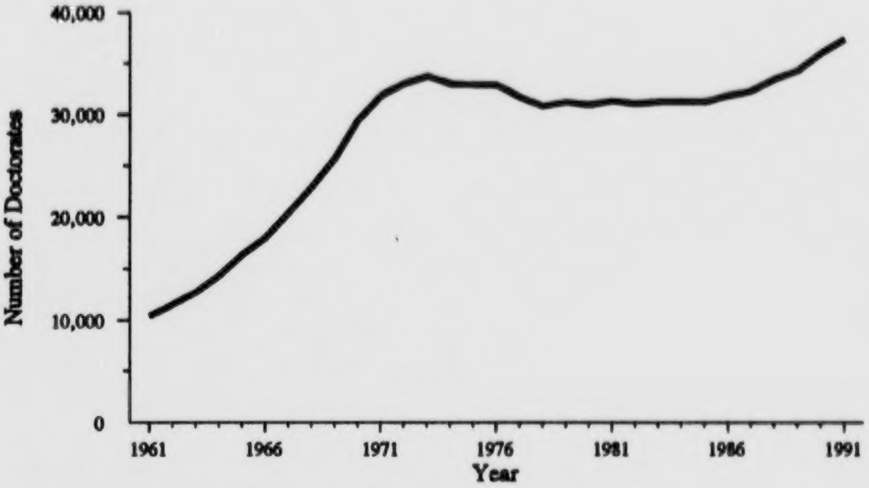
Number of Doctorates by Selected Characteristics

TABLE 1 Doctorates Awarded by U.S. Colleges and Universities, 1961-1991

Year	Number	Year	Number	Year	Number	Year	Number
1961	10,413	1969	25,743	1977	31,716	1985	31,297
1962	11,500	1970	29,498	1978	30,875	1986	31,895
1963	12,728	1971	31,867	1979	31,239	1987	32,363
1964	14,325	1972	33,041	1980	31,020	1988	33,489
1965	16,340	1973	33,755	1981	31,357	1989	34,318
1966	17,949	1974	33,047	1982	31,111	1990	36,057
1967	20,403	1975	32,952	1983	31,282	1991	37,451
1968	22,936	1976	32,946	1984	31,337		

In 1991, a record number of doctorates—37,451—were awarded by U.S. colleges and universities. As **Table 1** and **Figure 1** show, Ph.D. production declined during the mid-1970s, remained steady through most of the 1980s (increasing less than two percent annually), and then began to accelerate toward the end of the decade. Since 1987, the pace has picked up, with the number of doctorates awarded increasing between two and five percent annually.

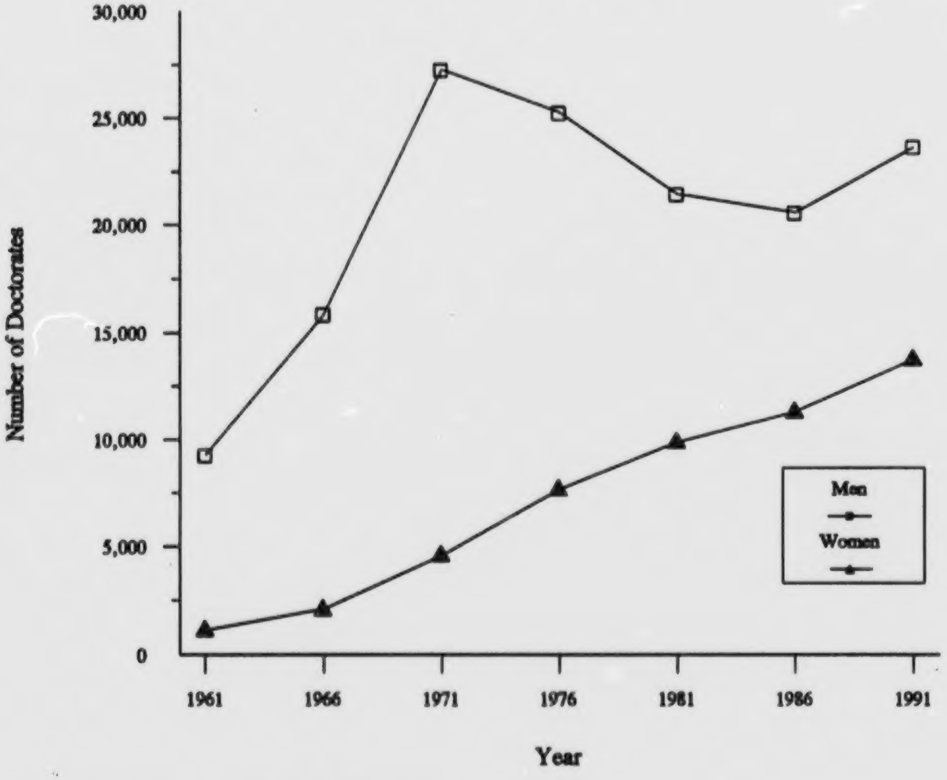
FIGURE 1 Doctorates awarded by U.S. colleges and universities, 1961-1991.



NOTE: See Table 1 for numbers of doctorates.

Since 1961, the number of women earning doctorates has increased twelvefold, rising from 1,128 in 1961 to 13,765 in 1991 (**Figure 2**). Women currently account for 36.8 percent of all Ph.D.s, up 26 percentage points since 1961. The number of Ph.D.s awarded to men peaked in the early 1970s and, despite recent growth, the 1991 numbers—23,686—were still below the record numbers reached in the early 1970s (see Table 4 for the number of doctorates earned by women and men).

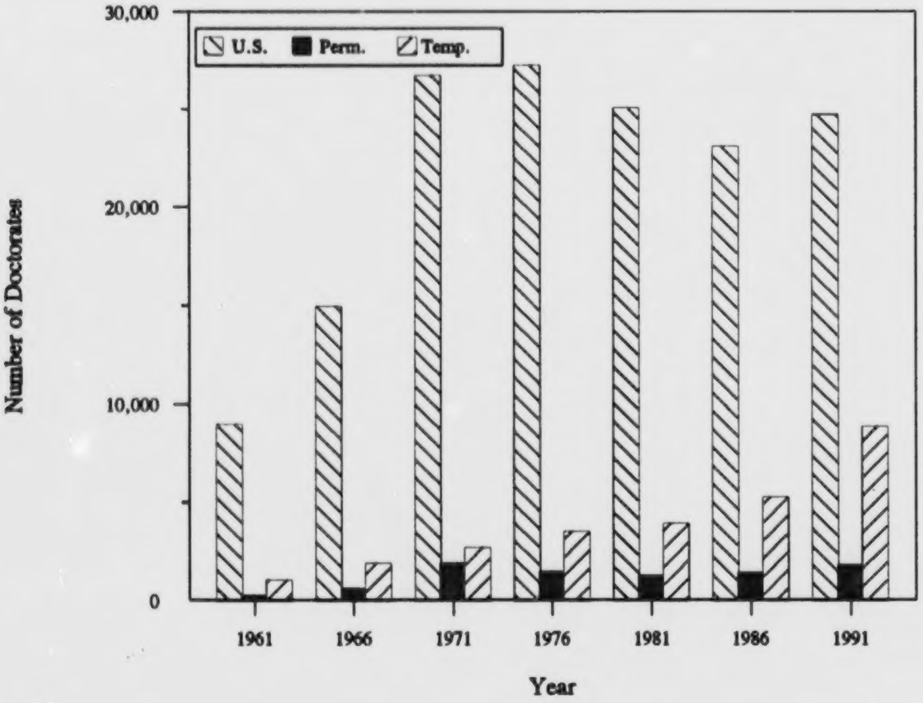
FIGURE 2 Doctorate recipients, by gender for selected years, 1961-1991.



NOTE: See Table 4 for numbers of Ph.D.s.

Doctorate recipients in 1991 were much more likely to be foreign than their counterparts thirty years ago (**Figure 3**). The number of doctorates awarded to non-U.S. citizens (permanent and temporary residents) has increased steadily from 1,196 in 1961 to 10,666 in 1991, rising particularly sharply during the 1980s. Temporary residents comprised the majority (83.0 percent) of non-U.S. citizens in 1991. Readers should note that nonresponse to citizenship status has increased overall in the last 10 years, rising from 3.4 percent in 1981 to 6.6 percent in 1986, and then falling to 5.5 percent in 1991. This increase may understate the growth in non-U.S. citizens and overstate the decrease in U.S. citizens earning Ph.D.s during this period (see Table 5 for numbers of Ph.D.s by citizenship).

FIGURE 3 Doctorate recipients, by citizenship for selected years, 1961-1991.



NOTE: See Table 5 for numbers of Ph.D.s. See technical notes in Appendix C for rates of nonresponse to the question on citizenship status.

The 30 countries that send the greatest numbers of students to the United States to earn doctorates are listed in **Table 2**. In 1991, the People's Republic of China led all other nations in the number of doctorate recipients from U.S. universities, followed closely by the Republic of Korea and Taiwan. These three countries and India accounted for half (49.9 percent), whereas Canada and Mexico (the United States' closest neighbors) constituted 6.1 percent of all foreign Ph.D.s.

TABLE 2 Top 30 Countries of Origin of Non-U.S. Citizens Earning Ph.D.s at U.S. Colleges and Universities, 1991 (ranked on number of Ph.D.s)

Country	Number	Country	Number
1. People's Republic of China*	1,710	16. Nigeria	120
2. Republic of Korea†	1,333	17. Israel	112
3. Taiwan, Republic of China*	1,280	18. Italy	111
4. India	883	19. Philippines	109
5. Canada	484	20. France	104
6. Iran	239	21. Turkey	101
7. England	193	22. Indonesia	99
8. Germany	175	23. Pakistan	99
9. Greece	175	24. Spain	98
10. Japan	157	25. Saudi Arabia	91
11. Mexico	154	26. Malaysia	86
12. Hong Kong	145	27. Australia	78
13. Brazil	142	28. Argentina	71
14. Thailand	141	29. Chile	65
15. Egypt	133	30. Sri Lanka	64

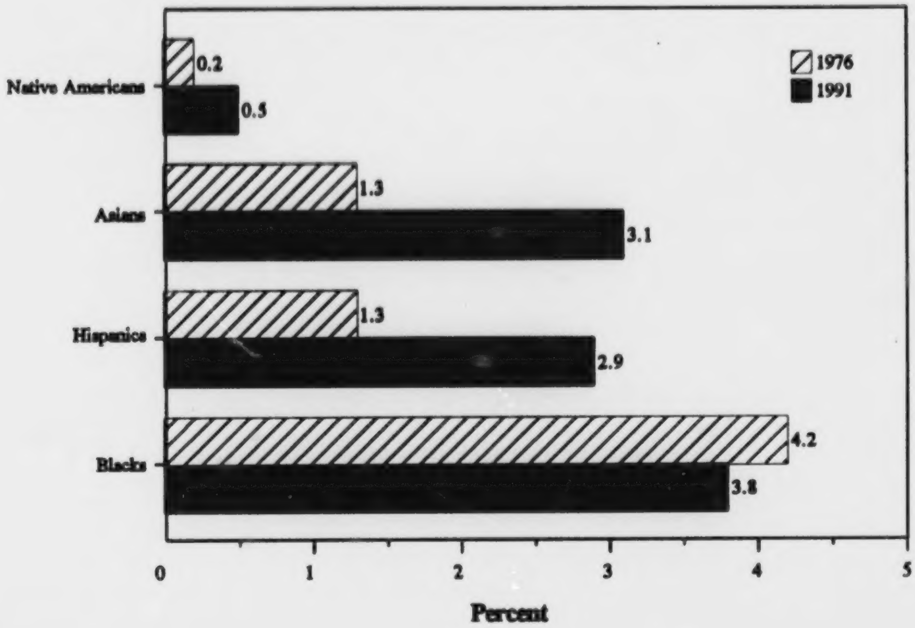
NOTE: See technical notes in Appendix C for rates of nonresponse to the country of citizenship question.

*An additional 153 Ph.D.s indicated "China" as their country of citizenship, but a more specific origin could not be determined. Thus, data for these recipients were excluded from the table.

†Includes "Korea, unspecified." The Democratic People's Republic of Korea (North Korea) does not permit its citizens to study in the United States.

In the last 15 years, U.S. "minorities" (e.g., Asians, blacks, Hispanics, and Native Americans) have increased their overall share of doctorates (**Figure 4**). However, in 1991, minorities constituted just over 10 percent of Ph.D.s awarded to U.S. citizens, and since 1976, the proportion of U.S. blacks earning Ph.D.s actually declined (reliable racial/ethnic data were not available before 1975).

FIGURE 4 Percentage of doctorates earned by U.S. minorities, 1976 and 1991.



NOTE: Percentages are based on the number of U.S. citizen Ph.D.s with known race/ethnicity. See Appendix Table B-2 for numbers of Ph.D.s; see technical notes in Appendix C for rates of nonresponse to citizenship and race/ethnicity.

Field of Doctorate

Over two-thirds of all doctorates awarded in 1991 were spread broadly across four fields: life sciences (18.5 percent); education (17.1 percent); physical sciences (16.8 percent); and social sciences (16.4 percent) **(Table 3)**. Engineering accounted for 13.9 percent and humanities constituted 10.9 percent of 1991 Ph.D.s.

Among the science fields during the late 1980s, life sciences replaced social sciences as the number one producer of Ph.D.s **(Figure 5)**. Although the number of Ph.D.s in physical sciences declined during the 1970s, this field's popularity resurged in the mid-1980s. Currently the field produces slightly more Ph.D.s than social sciences.

Although engineering accounted for just 14 percent of all Ph.D.s awarded in 1991, it nonetheless experienced the greatest increase of any broad field since 1961. The growth of physical sciences and engineering is primarily a result of increasing numbers of non-U.S. citizens earning doctorates in these fields (see Table 5 for numbers of non-U.S. citizen doctorate recipients).

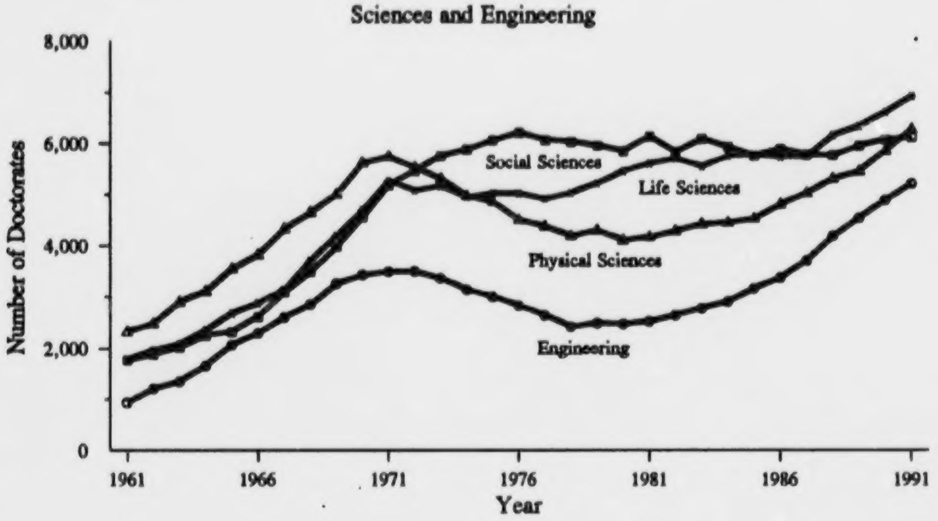
The number of Ph.D.s awarded in humanities and education has declined during the last 15 years, although 1991 showed an increase for humanities. In contrast, the number of doctorates in professional/other fields has risen steadily during this time, driven largely by business and management Ph.D.s which accounted for nearly half of all professional/other doctorates in 1991.

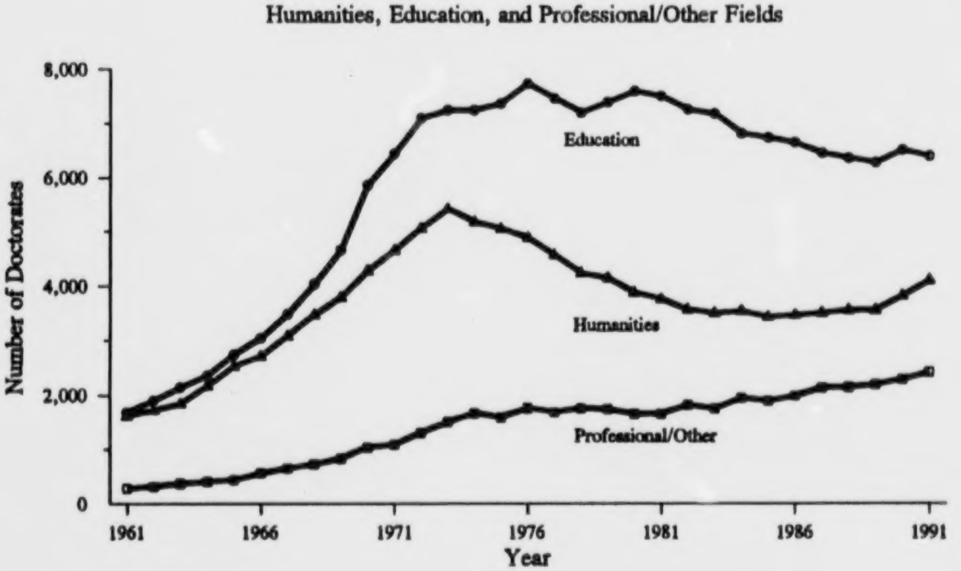
TABLE 3 Major Doctorate Field for Selected Years, 1961-1991

Field	1961	1966	1971	1976	1981	1986	1991
All Fields	10,413	17,949	31,867	32,946	31,357	31,895	37,451
Physical Sciences	2,325	3,828	5,739	4,509	4,170	4,807	6,276
Physics/Astronomy	597	1,061	1,738	1,237	1,015	1,187	1,408
Chemistry	1,150	1,594	2,211	1,624	1,612	1,903	2,194
Earth, Atmos. & Marine Sci.	246	404	552	645	583	589	837
Mathematics	332	769	1,238	1,003	728	729	1,040
Computer Sciences*	N/A	N/A	N/A	N/A	232	399	797
Engineering	940	2,301	3,498	2,834	2,528	3,376	5,212
Life Sciences	1,783	2,885	5,268	5,026	5,611	5,733	6,928
Biological Sciences	1,244	2,135	3,654	3,573	3,804	3,807	4,642
Health Sciences	101	174	541	503	657	770	1,049
Agricultural Sciences	438	576	1,073	950	1,150	1,156	1,237
Social Sciences	1,778	2,619	5,189	6,214	6,142	5,892	6,127
Psychology	820	1,139	2,145	2,883	3,358	3,124	3,240
Anthropology	55	97	239	428	369	381	340
Economics	413	627	820	885	825	860	877
Poli. Sci. & Int'l. Relations	254	408	821	791	532	490	522
Sociology	167	260	587	734	605	491	466
Other Social Sciences	69	88	577	493	453	546	682
Humanities	1,624	2,711	4,648	4,881	3,751	3,460	4,094
History	375	645	1,064	1,095	692	563	658
Amer. & Eng. Lang. & Lit.	373	671	1,244	1,214	820	719	853
Foreign Lang. & Lit.	189	380	728	835	576	445	498
Other Humanities	687	1,015	1,612	1,737	1,663	1,733	2,085
Education	1,679	3,040	6,435	7,725	7,497	6,645	6,397
Teacher Education	358	362	591	588	639	489	407
Teaching Fields	236	691	1,564	1,418	1,437	1,142	970
Other Education	1,085	1,987	4,280	5,719	5,421	5,014	5,020
Professional/Other	284	565	1,090	1,757	1,658	1,982	2,417
Business & Management	148	372	673	739	624	902	1,164
Communications	13	17	37	295	240	258	333
Other Professional Fields	119	153	265	676	759	796	839
Other Fields	4	23	115	47	35	26	81

*Not available prior to 1978.

FIGURE 5 Doctorate recipients, by broad field, 1961-1991.



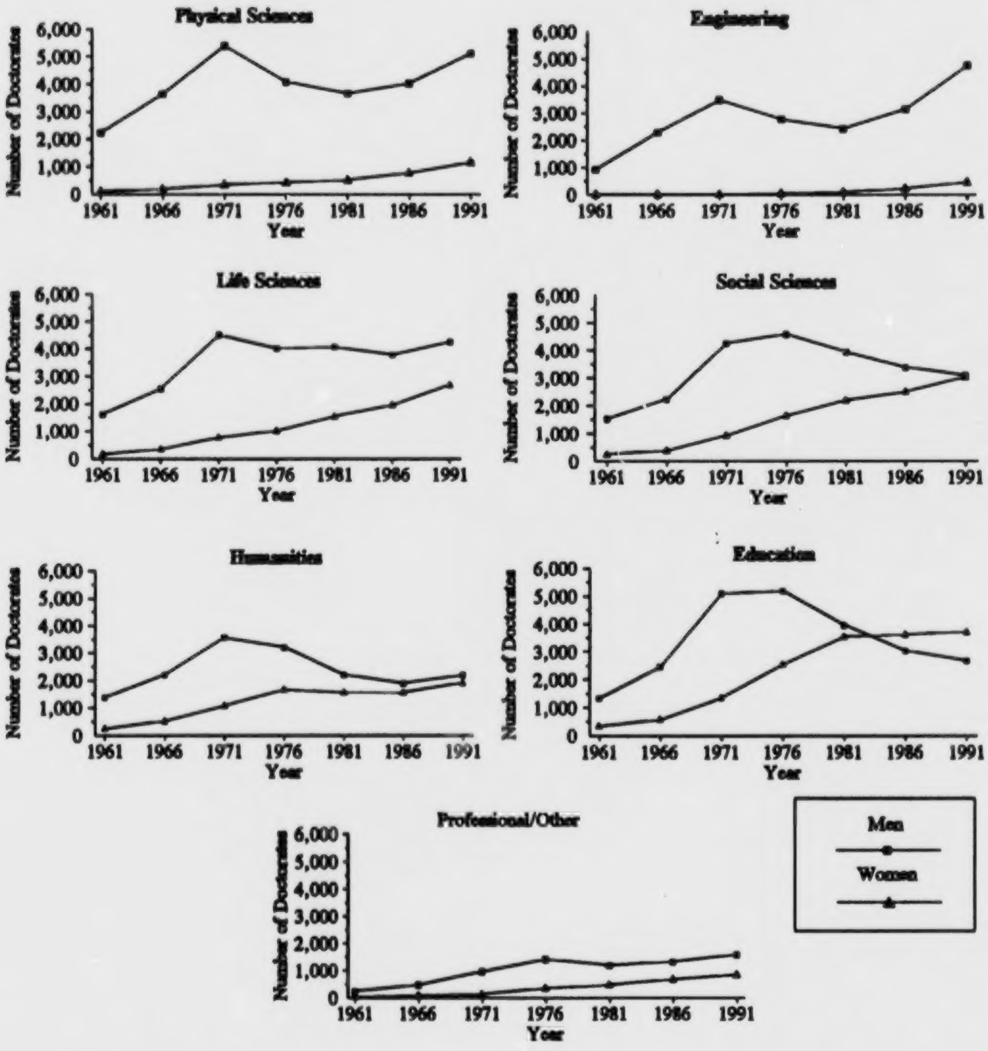


NOTE: See Table 3 for numbers of doctorates in selected years, 1961-1991.

During the last 30 years, women have steadily increased their representation in all the fields shown in **Figure 6**. The fields that showed the greatest growth in female Ph.D.s during this time period are physical sciences, engineering, professional/other fields, and life sciences.

The increasing numbers of female doctorates have been offset by decreasing numbers of men earning Ph.D.s in education, humanities, and social sciences.

FIGURE 6 Doctorate recipients, by gender and broad field for selected years, 1961-1991.



NOTE: See Table 4 for numbers of Ph.D.s.

Table 4 shows that despite significant increases in the numbers of female Ph.D.s since 1961, women currently outnumber men in only one field—education (58.1 percent)—and have achieved near parity in social sciences (49.4 percent) and humanities (46.5 percent). They earned over one-third of all doctorates in life sciences (38.6 percent) and professional/other fields (34.6 percent). Women continued to account for small proportions of Ph.D.s in engineering (8.7 percent) and physical sciences (18.4 percent). U.S. women will be discussed more fully in the special analysis section, beginning on page 29.

TABLE 4 Gender of Doctorate Recipients, by Broad Field for Selected Years, 1961-1991

Gender	1961	1966	1971	1976	1981	1986	1991
All Fields	10,413	17,949	31,867	32,946	31,357	31,895	37,451
Men	9,285	15,863	27,271	25,262	21,465	20,591	23,686
Women	1,128	2,086	4,596	7,684	9,892	11,304	13,765
Physical Sciences*	2,325	3,828	5,739	4,509	4,170	4,807	6,276
Men	2,243	3,649	5,398	4,089	3,667	4,033	5,122
Women	82	179	341	420	503	774	1,154
Engineering	940	2,301	3,498	2,834	2,528	3,376	5,212
Men	936	2,293	3,483	2,780	2,429	3,151	4,760
Women	4	8	15	54	99	225	452
Life Sciences	1,783	2,885	5,268	5,026	5,611	5,733	6,928
Men	1,618	2,541	4,503	4,013	4,076	3,785	4,254
Women	165	344	765	1,013	1,535	1,948	2,674
Social Sciences	1,778	2,619	5,189	6,214	6,142	5,892	6,127
Men	1,533	2,241	4,265	4,580	3,945	3,381	3,101
Women	245	378	924	1,634	2,197	2,511	3,026
Humanities	1,624	2,711	4,648	4,881	3,751	3,460	4,094
Men	1,382	2,201	3,571	3,208	2,203	1,896	2,190
Women	242	510	1,077	1,673	1,548	1,564	1,904
Education	1,679	3,040	6,435	7,725	7,497	6,645	6,397
Men	1,334	2,461	5,089	5,185	3,957	3,034	2,679
Women	345	579	1,346	2,540	3,540	3,611	3,718
Professional/Other	284	565	1,090	1,757	1,658	1,982	2,417
Men	239	477	962	1,407	1,188	1,311	1,580
Women	45	88	128	350	470	671	837

*Includes mathematics and computer sciences.

In the last thirty years, foreign students (permanent and temporary residents) have steadily increased their share of doctorates awarded by U.S. institutions in all fields, particularly in engineering and physical sciences (**Table 5**). In 1961, non-U.S. citizens earned just 22.4 percent of doctorates in engineering; by 1991 this figure had more than doubled to 59.1 percent. Physical sciences saw a similar increase, growing from 14.2 percent in 1961 to 42.3 percent in 1991.

TABLE 5 Citizenship Status of Doctorate Recipients, by Broad Field for Selected Years, 1961-1991

Field/Citizenship	1961	1966	1971	1976	1981	1986	1991
All Fields	10,413	17,949	31,867	32,946	31,357	31,895	37,451
U.S. Citizens	8,961	14,974	26,758	27,269	25,061	23,081	24,721
Permanent Residents	256	636	1,907	1,494	1,281	1,432	1,814
Temporary Residents	1,050	1,908	2,690	3,529	3,940	5,276	8,852
Unknown Citizenship	146	431	512	654	1,075	2,106	2,064
Physical Sciences*	2,325	3,828	5,739	4,509	4,170	4,807	6,276
U.S. Citizens	1,962	3,138	4,685	3,431	3,078	3,004	3,450
Permanent Residents	61	132	409	304	226	240	321
Temporary Residents	265	455	560	710	753	1,259	2,211
Unknown Citizenship	37	103	85	64	113	304	294
Engineering	940	2,301	3,498	2,834	2,528	3,376	5,212
U.S. Citizens	725	1,690	2,418	1,557	1,170	1,383	1,977
Permanent Residents	55	144	530	390	301	343	381
Temporary Residents	154	385	518	813	942	1,372	2,473
Unknown Citizenship	6	82	32	74	115	278	381
Life Sciences	1,783	2,885	5,268	5,026	5,611	5,733	6,928
U.S. Citizens	1,424	2,229	4,198	3,989	4,533	4,349	4,629
Permanent Residents	48	94	327	241	206	206	336
Temporary Residents	292	519	643	670	732	870	1,686
Unknown Citizenship	19	43	100	126	140	308	277
Social Sciences	1,778	2,619	5,189	6,214	6,142	5,892	6,127
U.S. Citizens	1,548	2,184	4,452	5,365	5,175	4,579	4,499
Permanent Residents	40	97	244	195	192	223	251
Temporary Residents	159	268	417	557	539	673	961
Unknown Citizenship	31	70	76	97	236	417	416
Humanities	1,624	2,711	4,648	4,881	3,751	3,460	4,094
U.S. Citizens	1,479	2,395	4,144	4,374	3,224	2,731	3,151
Permanent Residents	35	116	220	181	150	152	239
Temporary Residents	70	122	217	237	235	323	510
Unknown Citizenship	40	78	67	89	142	254	194
Education	1,679	3,040	6,435	7,725	7,497	6,645	6,397
U.S. Citizens	1,580	2,875	6,050	7,114	6,581	5,626	5,424
Permanent Residents	14	31	123	114	130	172	169
Temporary Residents	78	105	225	346	533	471	483
Unknown Citizenship	7	29	37	151	253	376	321
Professional/Other	284	565	1,090	1,757	1,658	1,982	2,417
U.S. Citizens	243	463	811	1,439	1,300	1,409	1,591
Permanent Residents	3	22	54	69	76	96	117
Temporary Residents	32	54	110	196	206	308	528
Unknown Citizenship	6	26	115	53	76	169	181

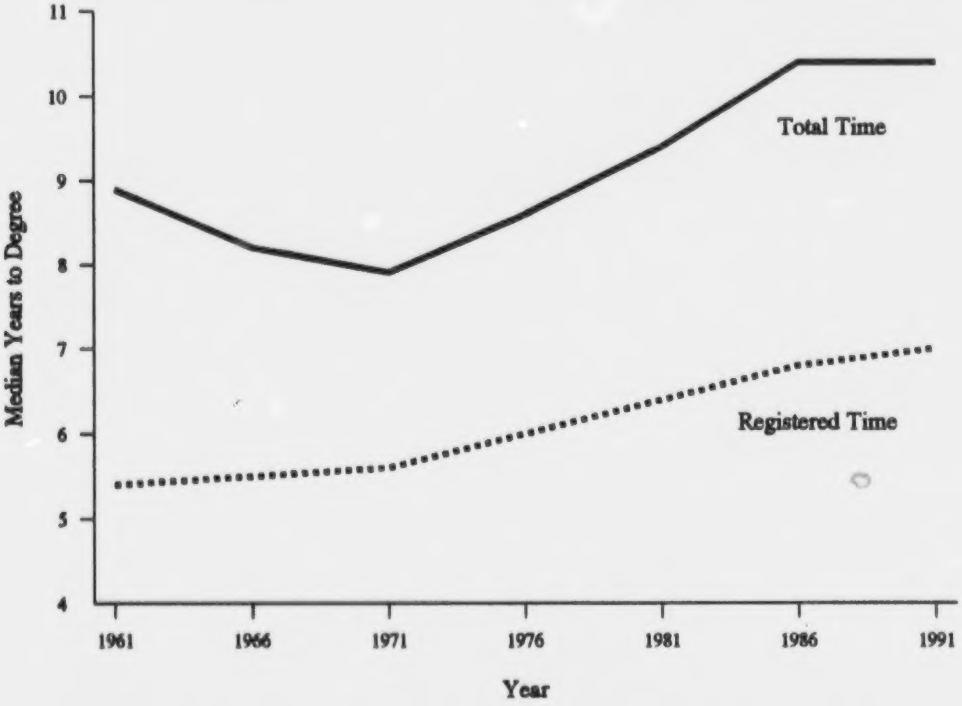
NOTE: See technical notes in Appendix C for rates of nonresponse to the question on citizenship status.

*Includes mathematics and computer sciences.

Time-to-Degree

The time graduate students take to complete their Ph.D.s ("time-to-degree") was shortest in the late 1960s, but has increased steadily since the 1970s (**Figure 7**). Registered time-to-degree (RTD) measures the amount of time students spend in graduate school (including time spent working on a master's or enrolled in a nondegree program). Total time-to-degree (TTD) gauges not only the amount of time spent in graduate school but also the number of years that have elapsed between earning the baccalaureate and entering graduate school (as well as any time spent out of school after the first graduate school entrance). Consequently, TTD is longer than RTD.

FIGURE 7 Median years to degree for doctorate recipients, all fields combined, 1961-1991.



NOTE: See Table 6 for median years to degree for all fields combined. See technical notes in Appendix C for rates of nonresponse to the applicable questions. A different method of computing TTD using baccalaureate-year cohort is discussed in Bowen, W., G. Lord, and J.A. Sosa, "Measuring Time to the Doctorate: A Reinterpretation of the Evidence," published in *The Proceedings of the National Academy of Sciences* (Vol. 88, pp. 713-717, February 1991, Washington, D.C.).

Since 1961, time-to-degree (both RTD and TTD) has increased by approximately 1.5 median years (**Table 6**). However, time-to-degree is quite field dependent. Humanities saw the greatest increase in RTD (2.6 median years) since 1961 and had the longest RTD (8.4 median years) in 1991. Physical sciences and engineering had the smallest increase (1.2 median years), and in 1991, engineering had the shortest RTD (6.1 median years). TTD increased the most in education (5.4 median years) and the least in physical sciences in the last 30 years. In 1991, education had the longest (18.4 median years) and physical sciences the shortest (7.8 median years) TTD.

TABLE 6 Median Years to Degree for Doctorate Recipients, by Broad Field for Selected Years, 1961-1991

Field	1961	1966	1971	1976	1981	1986	1991
All Fields							
Registered	5.4	5.5	5.6	6.0	6.4	6.8	7.0
Total	8.9	8.2	7.9	8.6	9.4	10.4	10.4
Physical Sciences*							
Registered	5.1	5.2	5.4	5.6	5.7	6.0	6.3
Total	6.7	6.0	6.3	6.7	6.8	7.3	7.8
Engineering							
Registered	4.9	5.1	5.4	5.6	5.7	5.9	6.1
Total	7.1	7.0	7.2	7.5	7.9	8.1	8.5
Life Sciences							
Registered	5.2	5.5	5.4	5.6	5.9	6.4	6.7
Total	7.9	7.3	6.8	7.3	7.4	8.6	9.1
Social Sciences							
Registered	5.3	5.4	5.5	5.8	6.5	7.2	7.5
Total	9.0	7.6	7.3	7.8	8.9	10.1	10.5
Humanities							
Registered	5.8	5.9	6.1	6.9	7.7	8.2	8.4
Total	10.2	9.8	9.1	9.7	10.8	12.1	12.3
Education							
Registered	6.6	6.8	6.1	6.3	7.0	7.8	8.1
Total	13.0	14.3	12.7	12.7	13.5	15.7	18.4
Professional/Other							
Registered	5.4	5.5	5.5	6.1	6.5	7.3	7.5
Total	11.9	10.8	10.2	10.3	11.1	12.8	13.5

NOTE: Medians are based on the number of individuals who have provided complete information about their postbaccalaureate education. See technical notes in Appendix C for rates of nonresponse to the applicable questions.
*Includes mathematics and computer sciences.

In addition to field, time-to-degree also varies by gender, citizenship status, and race (**Table 7**). For example, women's RTD is just over 0.5 year (0.6 median years) longer than men's. Yet, examining the data by field and gender shows that this gap narrows considerably in physical and life sciences, engineering, and education. Similarly, although they have higher overall TTDs than non-U.S. citizens, U.S. citizens have the shortest TTD in physical sciences, engineering, and life sciences.

TABLE 7 Median Years to Degree for Doctorate Recipients, by Citizenship, Race/Ethnicity, and Broad Field, 1991

	All Fields	Physical Sci.*	Eng.	Life Sci.	Social Sci.	Humanities	Education	Prof./ Other
RTD Years								
All Ph.D.s	7.0	6.3	6.1	6.7	7.5	8.4	8.1	7.5
Men	6.8	6.3	6.1	6.6	7.4	8.2	8.1	7.4
Women	7.4	6.2	6.2	6.7	7.6	8.6	8.0	7.7
U.S. Citizens	7.3	6.2	6.1	6.7	7.6	8.6	8.3	7.8
Permanent Residents	7.1	6.8	6.4	6.8	8.1	8.1	7.3	7.7
Temporary Residents	6.4	6.4	6.1	6.5	6.9	7.5	6.2	6.6
U.S. Citizens								
Asians	6.9	6.4	6.5	6.6	7.8	9.3	8.0	8.0
Blacks	8.1	6.8	6.0	6.8	8.5	10.0	8.2	8.3
Hispanics	7.6	6.4	6.1	6.7	7.8	8.5	8.6	7.8
Native Americans	7.4	6.3	6.5	7.4	7.6	9.5	7.7	6.5
Whites	7.2	6.2	6.1	6.7	7.5	8.5	8.3	7.7
TTD Years								
All Ph.D.s	10.4	7.8	8.5	9.1	10.5	12.3	18.4	13.5
Men	9.6	7.8	8.5	8.8	10.4	11.9	17.5	12.9
Women	12.4	7.5	8.0	9.6	10.8	12.9	19.0	14.8
U.S. Citizens	11.4	7.2	7.8	8.9	10.7	12.7	18.8	15.1
Permanent Residents	10.0	8.6	8.9	9.5	11.2	11.6	15.3	11.9
Temporary Residents	9.1	8.3	8.8	9.2	9.9	10.7	12.1	10.3
U.S. Citizens								
Asians	9.3	7.6	8.4	7.5	10.8	11.9	17.9	14.3
Blacks	16.0	7.8	9.5	12.3	12.0	14.3	20.0	15.7
Hispanics	11.5	7.3	7.2	9.2	10.3	13.4	17.8	14.7
Native Americans	13.8	8.0	9.5	13.8	10.3	12.8	19.0	18.0
Whites	11.3	7.1	7.8	8.9	10.6	12.6	18.8	15.0

NOTE: Medians are based on the number of individuals who have provided complete information about their postbaccalaureate education. Medians were computed wherever there were five or more Ph.D.s with known time-to-degree. See technical notes in Appendix C for rates of nonresponse to the applicable questions.

*Includes mathematics and computer sciences.

Financial Support

In 1991, the type of financial support doctorate recipients listed as the primary source for their graduate studies varied by field, gender, citizenship status, and race/ethnicity **(Table 8)**. University support was more common among Ph.D. recipients in physical sciences, engineering, and life sciences, whereas personal resources were more typical in social sciences, education, and professional/other fields. In humanities, Ph.D. recipients' primary source of support was split evenly between personal resources and university support.

Overall, men were more likely than women to list university support as their primary financial resource. When the data are disaggregated by field, however, there is near parity between the sexes in receipt of university support in physical sciences and engineering—two fields with few women—and in humanities and education. However, in life sciences (where women have made inroads in the last decade) and in social sciences (which has almost equal numbers of men and women), women were less likely than men to receive university support.

In all fields combined, non-U.S. citizens were more likely than U.S. citizens to list university support as the primary financial resource for their studies. Among the various U.S. racial/ethnic groups, receipt of university support varied by field. For example, in engineering, Asians and whites had higher proportions than the other racial/ethnic groups listing university sources as their primary financial support. In humanities, blacks and Hispanics were the likeliest of all racial/ethnic groups to receive university support.

Reliance on personal resources was most common in social sciences, education, and professional/other fields. Similar proportions of women and men listed personal resources as their primary source of support except in life sciences, social sciences, and professional/other fields. Non-U.S. citizens (permanent and temporary residents) were less likely than U.S. citizens to utilize personal resources as a primary financial support mechanism, because of their concentration in fields (e.g., physical sciences and engineering) in which university support was most common.

Among U.S. racial/ethnic groups, there was no clear pattern in the use of personal resources as the primary source of support for graduate studies. For example, in engineering, similar proportions of Asians, blacks, Hispanics, and whites utilized personal resources for their graduate studies. On the other hand, in education, Asians were the most likely and Native Americans the least likely to have utilized their own resources during graduate school.

TABLE 8 Primary Sources of Support for Doctorate Recipients, by Broad Field and Demographic Group, 1991

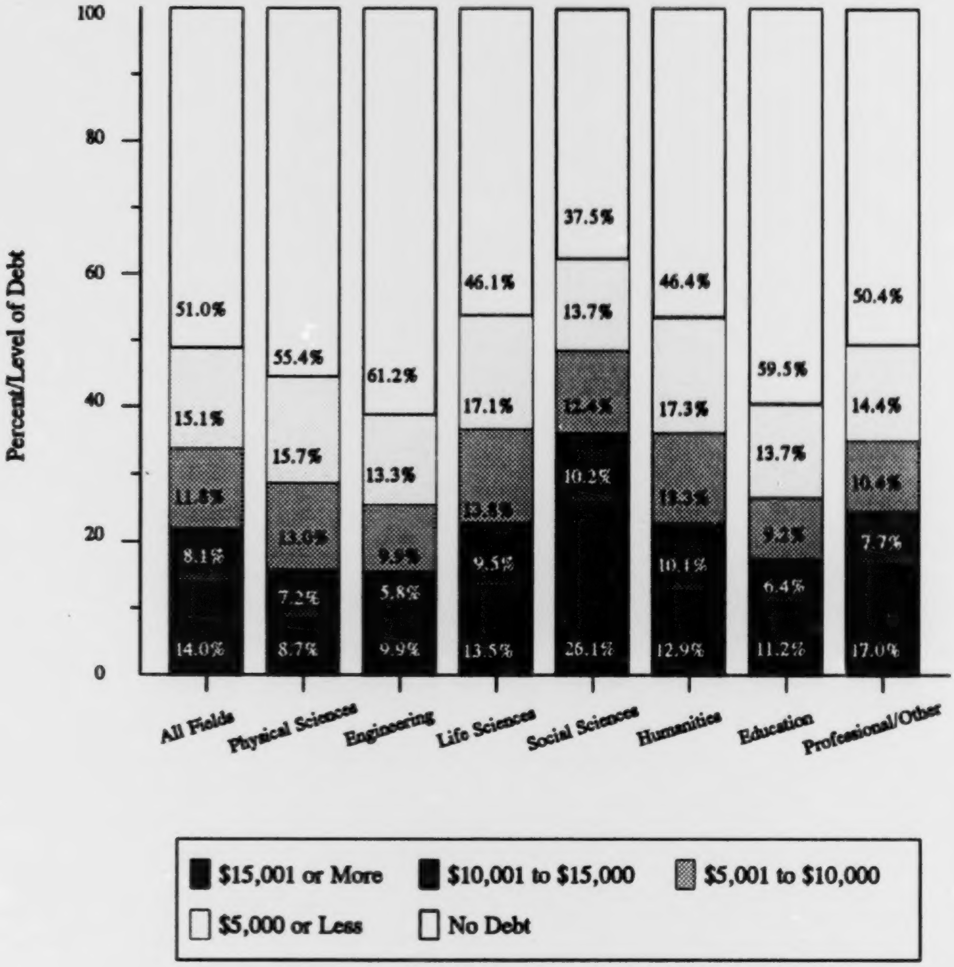
Primary Source of Support	All Ph.D.s	Men	Women	U.S. Cits.	Perm. Res.	Temp. Res.	U.S. Citizens				
							Asians	Blacks	His-panics	Native Amers.	Whites
All Fields (No.)	29,011	18,226	10,785	20,730	1,329	6,896	601	694	526	93	18,594
Personal	38.2	31.0	50.4	47.6	29.9	11.4	33.6	60.2	49.0	58.1	47.6
University	50.1	56.1	39.9	41.8	61.6	72.7	50.2	25.4	36.7	26.9	42.3
Federal	5.4	5.3	5.6	6.9	2.0	1.7	11.1	8.1	9.5	9.7	6.5
Other	6.4	7.6	4.2	3.7	6.4	14.2	5.0	6.3	4.8	5.4	3.5
Physical Sciences* (No.)	5,029	4,070	959	3,033	261	1,725	112	34	61	10	2,769
Personal	12.3	12.0	13.3	16.9	13.4	4.0	17.0	23.5	13.1	40.0	16.8
University	79.7	79.9	78.9	74.0	83.5	89.1	74.1	52.9	72.1	40.0	74.6
Federal	3.8	3.6	4.6	6.0	0.4	0.5	4.5	14.7	14.8	10.0	5.6
Other	4.2	4.5	3.1	3.1	2.7	6.4	4.5	8.8	0.0	10.0	2.9
Engineering (No.)	4,085	3,698	387	1,790	310	1,978	161	36	40	4	1,520
Personal	14.9	14.9	14.7	21.4	18.1	8.6	19.9	22.2	22.5	50.0	21.6
University	70.7	70.8	69.8	60.8	75.8	79.0	65.2	38.9	50.0	25.0	60.9
Federal	3.9	3.6	6.7	8.0	0.6	0.7	3.7	16.7	15.0	25.0	8.1
Other	10.5	10.6	8.8	9.8	5.5	11.7	11.2	22.2	12.5	0.0	9.4
Life Sciences (No.)	5,513	3,338	2,175	3,929	239	1,331	146	65	74	13	3,582
Personal	22.7	19.6	27.5	28.1	21.8	7.0	21.2	33.8	35.1	30.8	28.1
University	54.8	57.5	50.6	49.2	60.7	70.3	43.8	35.4	40.5	46.2	50.0
Federal	14.9	14.1	16.1	19.4	7.9	2.7	32.2	21.5	14.9	7.7	18.8
Other	7.6	8.8	5.8	3.3	9.6	20.0	2.7	9.2	9.5	15.4	3.0
Social Sciences (No.)	4,676	2,321	2,355	3,772	169	730	65	133	129	17	3,395
Personal	51.6	46.1	56.9	57.5	52.7	20.5	53.8	51.9	56.6	52.9	57.8
University	38.6	42.0	35.2	35.0	39.6	56.6	35.4	27.1	27.9	35.3	35.7
Federal	4.7	5.0	4.4	5.3	0.0	2.9	7.7	15.0	13.2	11.8	4.5
Other	5.2	6.9	3.5	2.1	7.7	20.0	3.1	6.0	2.3	0.0	1.9
Humanities (No.)	3,032	1,625	1,407	2,490	157	380	28	72	80	8	2,268
Personal	46.1	46.7	45.5	50.2	40.8	22.1	57.1	43.1	43.8	62.5	50.6
University	46.2	45.0	47.6	44.2	53.5	56.3	35.7	45.8	51.3	37.5	44.1
Federal	2.7	2.6	2.8	2.3	0.6	6.1	3.6	1.4	0.0	0.0	2.3
Other	4.9	5.6	4.1	3.3	5.1	15.5	3.6	9.7	5.0	0.0	3.0
Education (No.)	4,837	1,992	2,845	4,381	100	347	62	299	122	36	3,843
Personal	78.8	77.0	80.1	82.6	66.0	34.9	85.5	83.6	77.9	72.2	82.7
University	14.8	13.8	15.5	12.9	24.0	35.7	9.7	10.7	11.5	13.9	13.1
Federal	1.3	1.8	1.0	1.1	3.0	3.5	4.8	2.3	5.7	8.3	0.8
Other	5.1	7.5	3.4	3.4	7.0	25.9	0.0	3.3	4.9	5.6	3.4
Professional/Other (No.)	1,839	1,182	657	1,335	93	405	27	55	20	5	1,217
Personal	53.0	49.5	59.2	62.8	38.7	24.0	59.3	54.5	60.0	80.0	63.4
University	37.5	38.7	35.2	30.7	49.5	56.8	40.7	36.4	40.0	0.0	30.2
Federal	1.6	1.7	1.4	1.8	1.1	1.0	0.0	5.5	0.0	20.0	1.6
Other	8.0	10.1	4.3	4.6	10.8	18.3	0.0	3.6	0.0	0.0	4.8

NOTE: Numbers represent those Ph.D.s with known primary support; percentages are based on these numbers. "Personal" loans comprise loans, federal included, as well as own earnings and contributions from the spouse/family. Federally funded research assistantships (RAs) are grouped under "University" because recipients of such support may not know the actual source of funding. For further definition of "Federal" support, see item 17 on the survey questionnaire in Appendix D. "Other" support includes U.S. nationally competitive fellowships, business/employer funds, foreign government, state government, and other nonspecified sources. See technical notes in Appendix C for rates of nonresponse to this question.

*Includes mathematics and computer sciences.

The level of doctorate recipients' educational debt (funds borrowed to finance undergraduate and graduate education) varied considerably by field in 1991 (**Figure 8**). More than 50 percent of Ph.D.s in life sciences, social sciences, and humanities completed their graduate studies with some kind of debt. Recipients in engineering and education were the least likely and those in social sciences the most likely to have incurred debt; and social scientists had the highest proportion with debt greater than $15,000.

FIGURE 8 Cumulative debt related to education, by broad field, 1991.



NOTE: See technical notes in Appendix C for rates of nonresponse to the question on cumulative debt.

Level of educational debt is also related to citizenship status and race/ethnicity (**Table 9**). In 1991, U.S. citizens were much more likely than non-U.S. citizens to finish their doctorate in debt. However, among only those with debt, U.S. citizens had a slightly smaller proportion with debt greater than $15,000 than did non-U.S. citizens.

Among U.S. racial/ethnic groups, blacks, Hispanics, and Native Americans were more likely than Asians and whites to have debt. They also tended to have the highest levels of debt (more than $15,000).

Table 9 shows temporary residents with the smallest percentage of Ph.D.s owing more than $15,000. However, when only those Ph.D.s with debt are examined, similar proportions of temporary residents, U.S. blacks and U.S. Hispanics reported debt greater than $15,000.

TABLE 9 Cumulative Debt Related to Education, by Demographic Group, 1991 (in percent)

							U.S. Citizens				
	All Ph.D.s	Men	Women	U.S. Cits.	Perm. Res.	Temp. Res.	Asians	Blacks	His-panics	Native Amers.	Whites
All Ph.D.s (No.)	37,451	23,686	13,765	24,721	1,814	8,852	762	933	708	128	21,859
Without Debt	51.0	51.0	50.8	43.3	59.1	71.0	44.5	38.0	34.3	34.4	43.9
With Debt	49.0	49.0	49.2	56.7	40.9	29.0	55.5	62.0	65.7	65.6	56.1
$5,000 or less	15.1	15.0	15.3	16.9	11.7	10.7	16.2	16.5	15.7	21.9	16.9
$5,001 to $10,000	11.8	12.0	11.6	14.1	10.4	5.7	12.3	13.5	14.4	13.3	14.2
$10,001 to $15,000	8.1	8.2	8.0	10.0	6.3	3.2	10.9	8.6	13.4	9.4	9.9
$15,001 or more	14.0	13.8	14.3	15.7	12.5	9.5	16.2	23.4	22.2	21.1	15.1

NOTE: Numbers include recipients whose debt status is unknown; percentages are based on the number who responded to the question. Percentages for "with" and "without" debt add to 100.0. Percentages for levels of debt add to the total percentage of Ph.D.s "with debt." See technical notes in Appendix C for rates of nonresponse to this question.

Postgraduation Plans

Since 1971, declining proportions of Ph.D. recipients in all fields had postgraduation work plans while increasing proportions had postdoctoral study plans (**Table 10**). Ph.D. recipients in education, professional/other fields, and humanities had the highest proportions with employment plans. Among the sciences, social scientists were the most likely and life scientists the least likely to have work plans; in the latter fields, plans for postdoctoral study are the norm.

TABLE 10 Postgraduation Commitments of Doctorate Recipients, by Broad Field for Selected Years, 1971-1991 (in percent)

	All Fields	Physical Sci.*	Eng.	Life Sci.	Social Sci.	Humanities	Education	Prof./ Other
All Commitments (No.)								
1971	23,867	4,179	2,430	3,885	4,099	3,543	4,896	835
1976	22,503	3,111	1,911	3,622	4,297	2,730	5,468	1,364
1981	21,889	3,133	1,778	4,033	4,188	2,270	5,208	1,279
1986	21,297	3,300	2,066	4,013	3,841	2,005	4,628	1,444
1991	24,082	4,036	2,855	4,764	3,876	2,440	4,408	1,703
Employment								
1971	84.2	64.5	90.3	60.3	92.4	97.5	98.4	99.2
1976	82.0	58.8	84.8	50.2	89.8	96.7	97.9	98.7
1981	80.7	65.8	88.5	46.4	86.4	95.8	97.7	99.1
1986	76.0	55.9	81.1	41.3	84.4	92.6	97.1	98.0
1991	72.5	51.5	79.0	37.6	82.6	92.7	96.1	97.1
Study								
1971	15.8	35.5	9.7	39.7	7.6	2.5	1.6	0.8
1976	18.0	41.2	15.2	49.8	10.2	3.3	2.1	1.3
1981	19.3	34.2	11.5	53.6	13.6	4.2	2.3	0.9
1986	24.0	44.1	18.9	58.7	15.6	7.4	2.9	2.0
1991	27.5	48.5	21.0	62.4	17.4	7.3	3.9	2.9

NOTE: Only Ph.D.s with definite commitments are included. Numbers include recipients who reported definite commitments but not type of plans (employment or study). Percentages are based on the number of Ph.D.s whose specific plans are known. See technical notes in Appendix C for rates of nonresponse to the applicable questions and for further explanation of postgraduation plans.

*Includes mathematics and computer sciences.

Doctorate recipients in 1991 were much more likely than their counterparts 20 years earlier to have postdoctoral study commitments **(Table 11)**. This was particularly true for men, who constitute the majority of Ph.D.s in physical and life sciences—two fields where postdoctoral appointments are common. Although the proportion of women with definite job commitments has declined since 1971, they were still more likely than men to have definite employment commitments, probably because of their specialization in education where postgraduation work plans are the norm. Among the various U.S. racial/ethnic groups, blacks were the most likely to have work commitments whereas Asians were the most apt to have study commitments. The different postgraduation plans of these two groups is largely a result of high concentrations of blacks in education and high proportions of Asians in life sciences.

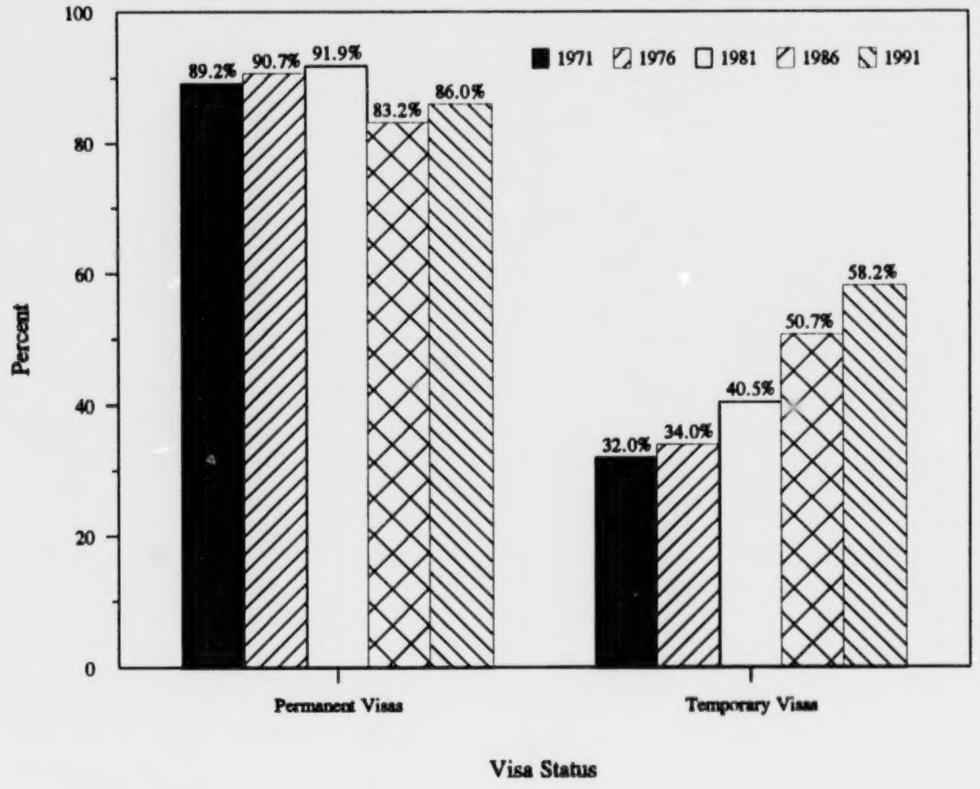
TABLE 11 Postgraduation Commitments of Doctorate Recipients, by Demographic Group for Selected Years, 1971-1991 (in percent)

							U.S. Citizens & Permanent Residents*				
	All Ph.D.s	Men	Women	U.S. Cits.	Perm. Res.	Temp. Res.	Asians	Blacks	His-panics	Native Amers.	Whites
All Commitments (No.)											
1971	23,867	20,866	3,001	20,841	1,162	1,842	N/A	N/A	N/A	N/A	N/A
1976	22,503	17,703	4,800	19,318	885	2,238	600	781	262	22	17,986
1981	21,889	15,461	6,428	18,454	786	2,609	699	761	374	62	16,738
1986	21,297	13,902	7,395	17,004	822	3,424	657	634	457	64	15,697
1991	24,082	15,043	9,039	17,834	975	5,227	869	706	556	86	16,347
Employment											
1971	84.2	84.1	85.3	85.3	74.4	78.1	N/A	N/A	N/A	N/A	N/A
1976	82.0	81.2	85.1	83.1	73.3	75.7	67.5	94.3	90.6	90.5	82.7
1981	80.7	79.4	83.7	80.8	82.6	78.9	77.3	93.9	85.5	90.3	80.5
1986	76.0	73.6	80.3	77.7	75.9	67.2	68.0	88.7	79.0	71.4	77.7
1991	72.5	69.8	77.0	75.6	69.7	62.6	63.1	86.2	74.1	77.9	75.6
Study											
1971	15.8	15.9	14.7	14.7	25.6	21.9	N/A	N/A	N/A	N/A	N/A
1976	18.0	18.8	14.9	16.9	26.7	24.3	32.5	5.7	9.4	9.5	17.3
1981	19.3	20.6	16.3	19.2	17.4	21.1	22.7	6.1	14.5	9.7	19.5
1986	24.0	26.4	19.7	22.3	24.1	32.8	32.0	11.3	21.0	28.6	22.3
1991	27.5	30.2	23.0	24.4	30.3	37.4	36.9	13.8	25.9	22.1	24.4

NOTE: Only Ph.D.s with definite commitments are included. Numbers include recipients who reported definite commitments but not type of plans (employment or study). Percentages are based on the number of Ph.D.s whose specific plans are known. See technical notes in Appendix C for rates of nonresponse to the applicable questions and for further explanation of postgraduation plans.
*Race/ethnicity was not available in 1971.

Non-U.S. citizens with permanent visas have always been more likely than those with temporary visas to remain in the United States after earning the doctorate (**Figure 9**). However, increasing proportions of temporary residents planned to either study or work in the United States after graduation.

FIGURE 9 Percentage of non-U.S. citizen doctorate recipients with definite commitments who plan to remain in the United States after graduation, by visa status for selected years, 1971-1991.



NOTE: Only Ph.D.s with definite commitments are included; see Table 11 for numbers of non-U.S. citizens with commitments. See technical notes in Appendix C for rates of nonresponse to the applicable questions.

In 1991, most foreign students planned to remain in the United States after earning the doctorate (**Table 12**). Permanent residents were more likely than temporary residents to have definite U.S. work commitments, and nearly equal proportions of each group had plans to study in the United States.

TABLE 12 Postdoctoral Location of Non-U.S. Citizen Doctorate Recipients with Postgraduation Commitments, by Visa Status and Major Field, 1991 (in percent)

	Postdoctoral Location							
	Permanent Visas				Temporary Visas			
	U.S. Location		Foreign Location		U.S. Location		Foreign Location	
Field of Doctorate	Empl	Study	Empl	Study	Empl	Study	Empl	Study
All Fields	60.1	26.3	10.1	3.5	30.6	27.7	32.6	9.0
Physical Sciences	52.8	39.4	2.8	5.0	29.9	41.6	15.9	12.6
Physics/Astronomy	23.3	62.8	2.3	11.6	12.7	58.9	8.5	19.9
Chemistry	45.9	47.5	1.6	4.9	21.0	55.9	10.6	12.5
Earth, Atmos. & Marine	66.7	33.3	0.0	0.0	11.6	30.4	41.1	17.0
Mathematics	70.0	20.0	6.7	3.3	48.8	24.8	17.1	9.3
Computer Sciences	82.4	14.7	2.9	0.0	60.9	14.4	22.3	2.5
Engineering	76.2	14.0	7.6	2.3	41.6	20.5	31.6	6.3
Life Sciences	27.3	57.1	10.1	5.6	9.5	49.4	29.2	11.9
Biological Sciences	15.6	74.8	3.7	5.9	6.9	66.5	14.3	12.4
Health Sciences	51.5	18.2	21.2	9.1	21.8	18.8	50.5	8.9
Agricultural Sciences	53.3	20.0	26.7	0.0	11.6	19.0	57.7	11.6
Social Sci. (incl. Psych.)*	69.0	14.2	15.0	1.8	38.2	8.0	47.3	6.5
Economics	70.0	10.0	15.0	5.0	42.6	1.9	49.8	5.7
Political Sci./Int'l. Relat.	88.9	5.6	5.6	0.0	31.9	6.4	46.8	14.9
Humanities	75.4	9.2	11.5	3.8	34.4	8.5	49.2	7.9
Education	64.8	11.3	21.1	2.8	17.4	1.9	73.6	7.0
Professional/Other*	82.7	4.0	13.3	0.0	54.3	2.3	40.2	3.2
Business & Management	87.3	1.8	10.9	0.0	69.7	1.7	26.0	2.6

NOTE: Only Ph.D.s with definite commitments are included; see Table 11 for numbers of non-U.S. citizens with commitments. Percentages are based on the number of Ph.D.s with known postgraduation plans and location in each field. See technical notes in Appendix C for rates of nonresponse to these questions and for further explanation of postgraduation plans.

*Totals include other fields not shown.

In 1991, doctorate recipients were much less likely to have academic employment plans than their counterparts 20 years ago (**Table 13**). In 1971, over half of Ph.D. recipients in all fields, except engineering, planned to work in academe. By 1991, this was true only for doctorate recipients in life sciences, humanities, and professional/other fields (and for just 50 percent of social scientists). To which other sectors have doctorate recipients gone? In 1991, physical scientists and engineers were most likely to have employment plans in industry or to be self-employed. Although half of social scientists had academic commitments in 1991, they were much more likely to have employment plans in industry or "other" sectors (e.g., K-12 schools and nonprofit organizations) than their counterparts in 1971.

TABLE 13 Employment Sector of Doctorate Recipients with Postgraduation Commitments in the United States, by Broad Field for Selected Years, 1971-1991 (U.S. citizens and permanent residents, in percent)

	All Fields	Physical Sci.*	Eng.	Life Sci.	Social Sci.	Human-ities	Educa-tion	Prof./ Other
All Employed Ph.D.s								
1971	17,959	2,402	1,890	1,951	3,333	3,134	4,535	714
1976	16,143	1,562	1,256	1,453	3,371	2,366	4,983	1,152
1981	15,262	1,774	1,052	1,459	3,223	1,946	4,711	1,097
1986	13,476	1,445	1,053	1,262	2,805	1,612	4,135	1,164
1991	13,742	1,434	1,290	1,299	2,652	1,897	3,892	1,278
Academe†								
1971	68.7	54.4	30.9	68.5	75.8	93.9	67.6	81.4
1976	60.2	45.7	26.1	59.0	63.3	86.7	54.8	77.5
1981	50.9	29.8	26.2	56.3	49.7	78.8	47.5	70.5
1986	48.5	30.1	29.4	52.5	44.2	77.1	44.1	70.9
1991	52.5	35.6	25.5	52.1	50.0	83.6	46.8	75.0
Industry/Self-Employed								
1971	11.7	30.4	46.5	11.0	3.6	1.0	1.4	7.0
1976	11.9	35.6	51.2	16.5	7.1	2.7	2.5	5.3
1981	18.7	56.2	57.0	22.3	13.7	6.4	5.4	10.0
1986	20.8	57.0	55.1	25.2	19.2	7.2	7.1	11.0
1991	19.3	49.3	57.0	24.1	18.4	4.3	5.7	7.8
Government								
1971	10.6	12.3	19.6	17.1	13.1	1.3	8.0	9.2
1976	12.6	16.2	20.1	17.9	17.0	3.1	11.1	6.7
1981	12.9	12.5	14.8	15.5	19.7	4.4	11.9	7.7
1986	11.5	10.5	13.8	15.9	16.1	3.7	11.2	6.8
1991	9.5	12.4	15.2	15.8	13.6	2.5	6.7	4.3
Other‡								
1971	9.0	2.9	3.0	3.4	7.6	3.9	23.0	2.4
1976	15.3	2.4	2.6	6.6	12.6	7.5	31.7	10.4
1981	17.5	1.5	2.0	6.0	16.9	10.4	35.2	11.9
1986	19.1	2.5	1.7	6.4	20.4	12.0	37.5	11.2
1991	18.7	2.7	2.4	8.0	17.9	9.6	40.8	12.9

NOTE: Only Ph.D.s with definite commitments for employment are included. Foreign locations are excluded. Numbers include recipients whose employment sector is unknown; percentages are based on the number of Ph.D.s who reported employment sector. See technical notes in Appendix C for rates of nonresponse to this question.

*Includes mathematics and computer sciences.

†Academe includes two- and four-year colleges and universities, and medical schools. Elementary and secondary schools are included in "Other."

‡"Other" is mainly composed of elementary and secondary schools and nonprofit organizations.

As shown in Table 13, the employment sector of Ph.D.s depends a great deal on their field of specialization. Because men tend to specialize in physical sciences and engineering, they were more likely than women to have definite work commitments in industry/self-employment, although the proportion of female Ph.D.s (U.S. citizen and permanent residents) with work plans in this sector increased fivefold in the last twenty years (**Table 14**).

Among the different racial/ethnic groups (U.S. citizen and permanent residents), blacks and Hispanics were the most likely to have academic work commitments. Close to half of all Asians planned to work in industry/self-employment, largely due to their specialization in engineering.

In 1991, temporary residents were slightly more likely than U.S. citizens to have academic work commitments and significantly more likely to have employment plans in industry/self-employment (38.7 percent vs. 18.6 percent). The latter is a result of the preponderance of temporary residents in engineering. U.S. citizens were much more likely than permanent or temporary residents to work in government or other sectors (e.g., K-12 schools and nonprofit organizations).

TABLE 14 Employment Sector of Doctorate Recipients with Postgraduation Commitments in the United States, by Demographic Group for Selected Years, 1971-1991 (in percent)

	U.S. Citizens & Permanent Residents*										
	All Ph.D.s	Men	Women	Asians	Blacks	His-panics	Native Amers.	Whites	U.S. Cits.	Perm. Res.	Temp. Res.
All Employed Ph.D.s (No.)											
1971	17,959	15,606	2,353	N/A	N/A	N/A	N/A	N/A	17,193	766	293
1976	16,143	12,379	3,764	387	710	230	19	14,404	15,564	579	366
1981	15,262	10,227	5,035	513	705	311	56	13,218	14,666	596	597
1986	13,476	8,015	5,461	405	539	344	44	11,933	12,970	506	804
1991	13,742	7,516	6,226	512	592	403	64	12,013	13,168	574	1,536
Academe†											
1971	68.7	67.1	79.8	N/A	N/A	N/A	N/A	N/A	68.8	68.2	66.6
1976	60.2	57.0	70.5	40.9	68.1	70.4	73.7	60.1	60.4	52.4	56.0
1981	50.9	47.6	57.7	32.3	55.2	64.8	43.6	51.1	51.2	43.3	47.7
1986	48.5	45.2	53.5	34.5	51.0	58.1	62.8	48.6	48.5	50.4	64.4
1991	52.5	48.3	57.5	37.9	59.5	63.5	53.1	52.4	52.4	53.0	54.9
Industry/Self-Employed											
1971	11.7	13.0	2.5	N/A	N/A	N/A	N/A	N/A	11.1	24.2	24.6
1976	11.9	14.1	5.0	44.3	2.8	4.8	0.0	11.5	11.0	36.8	28.4
1981	18.7	22.8	10.5	54.0	8.5	9.1	14.5	17.9	17.6	46.5	42.0
1986	20.8	25.4	14.1	48.5	7.7	12.1	4.7	20.7	20.1	38.6	30.8
1991	19.3	24.6	12.9	47.3	8.0	13.0	14.1	18.8	18.6	36.7	38.7
Government											
1971	10.6	11.2	6.5	N/A	N/A	N/A	N/A	N/A	10.9	4.4	3.8
1976	12.6	14.0	8.1	10.4	11.5	10.4	0.0	12.8	12.9	4.4	5.5
1981	12.9	13.8	11.1	7.7	13.1	13.4	16.4	13.2	13.3	3.2	2.5
1986	11.5	12.7	9.8	8.5	15.1	13.3	16.3	11.4	11.8	5.6	1.4
1991	9.5	10.8	7.9	9.1	8.7	7.8	9.4	9.6	9.7	4.0	1.6
Other‡											
1971	9.0	8.7	11.3	N/A	N/A	N/A	N/A	N/A	9.3	3.2	5.1
1976	15.3	14.9	16.4	4.4	17.5	14.3	26.3	15.6	15.6	6.4	10.1
1981	17.5	15.8	20.8	5.9	23.2	12.7	25.5	17.8	17.9	7.0	7.7
1986	19.1	16.7	22.6	8.5	26.2	16.5	16.3	19.3	19.6	5.4	3.4
1991	18.7	16.3	21.7	5.7	23.8	15.8	23.4	19.2	19.3	6.3	4.7

NOTE: Only doctorates with definite commitments for employment are included. Foreign locations are excluded. Numbers include recipients whose employment sector is unknown; percentages are based on the number of Ph.D.s who reported employment sector. See technical notes in Appendix C for rates of nonresponse to this question.

*Race/ethnicity was not available in 1971.

†Academe includes two- and four-year colleges and universities and medical schools. Elementary and secondary schools are included in "Other."

‡"Other" is mainly composed of elementary and secondary schools and nonprofit organizations.

U.S. CITIZEN FEMALE DOCTORATES

(SPECIAL SECTION)

> The nature of the economic base [of the United States] presents a growing need for skilled workers, for knowledge workers, for intellectual talent, and for ingenuity. Since the new entrants to the work force by the year 2000 will be predominantly women and minorities...there is an important opportunity to meet the nation's needs for scientists and engineers by increasing the numbers of women and minorities receiving advanced preparations in those fields.[1]

In recent years different strategies—particularly at the postsecondary level—have been designed and implemented to attract women to and maintain their presence in science and engineering fields as well as other doctoral programs. This section examines women's attainment of the doctorate in sciences, engineering, humanities, education, and professional/other fields in 1991. The following questions frame this special analysis section: How many women earned doctorates? What fields do most women choose? What types of undergraduate and graduate institutions do they attend? How long does it take women to complete the doctorate? What types of financial support do they receive? What are their postdoctoral employment or study plans?

Since 1976, women have accounted for an increasing proportion of U.S. doctorate recipients and although this section sketches some broad gender differences (such as numbers and field distribution), the primary focus is U.S. female doctorate recipients in 1991.[2] This section presents the data by race/ethnicity as well as gender because the overwhelming numbers of white women mask interesting variations in the data among the various U.S. racial/ethnic groups. Because a study of the factors influencing women's attainment of the doctorate is beyond the scope of this technical report, descriptive rather than analytic statistics are presented and discussed. The following six sections provide data on U.S. female Ph.D.s by race/ethnicity: 1) Trends in Numbers and Proportions of Doctorates; 2) Field of Doctorate; 3) Degree-Granting Institutions; 4) Time-to-Degree; 5) Financial Support (and Debt); and 6) Postgraduation Plans. Tables referred to in the text are found at the end of the special analysis section. The time period covered in this section begins in 1976 because reliable racial/ethnic data are not available before 1975.

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[1] Dix, L.S., and M. L. Matyas, eds., 1992. Science and Engineering Programs: On Target for Women, Washington, D.C.: National Academy Press.

[2] A total of 2,320 non-U.S. women were excluded from these analyses. Comparison tables for U.S. men are found in Appendix B Tables on pages 101-103.

The five racial/ethnic groups discussed are Asians, blacks, Hispanics, Native Americans, and whites. Ethnicity takes precedence over race in this analysis; respondents claiming Hispanic heritage are designated as Hispanic regardless of racial identification (see items 9 and 10 on the survey form in Appendix D, page 125).[3] Only U.S. citizens (native and naturalized) are included in this discussion.

Trends in Numbers and Proportions of Doctorates

Between 1976 and 1991, the number of U.S. women earning doctorates increased steadily from 6,842 to 10,836, whereas the number of U.S. men earning Ph.D.s decreased from 20,427 to 13,885 (Table S-1 and Appendix Table B-2). There were nearly 60 percent more female Ph.D. recipients in 1991 than in 1976 compared with 32 percent fewer men. Although the numbers of women earning Ph.D.s increased across all racial/ethnic groups, this was not the case for men. Since 1976, the number of U.S. men earning doctorates decreased 41 percent among blacks and 33 percent among whites; Asian, Hispanic, and Native American groups all saw increases in men obtaining Ph.D.s. In 1991, women constituted 43.8 percent of U.S. doctorate recipients.

Female representation among U.S. doctorate recipients varied considerably by race/ethnicity (Table S-1). Totaling 9,495 in 1991, white women constituted by far the majority of U.S. female doctorates (88.4 percent), followed by black women (5.1 percent), Hispanic women (3.3 percent), Asian women (2.7 percent), and Native American women (0.5 percent). Nonwhite women constituted 5.1 percent and white women 38.9 percent of all doctorates awarded to U.S. citizens in 1991. Examining the data by race/ethnicity shows that among some groups, Ph.D.s are just as likely to be women as men. In 1991, nearly three-fifths of all blacks and one-half of Hispanics were female, whereas white, Native American, and Asian doctorate recipients continued to be predominately male (Table S-1).

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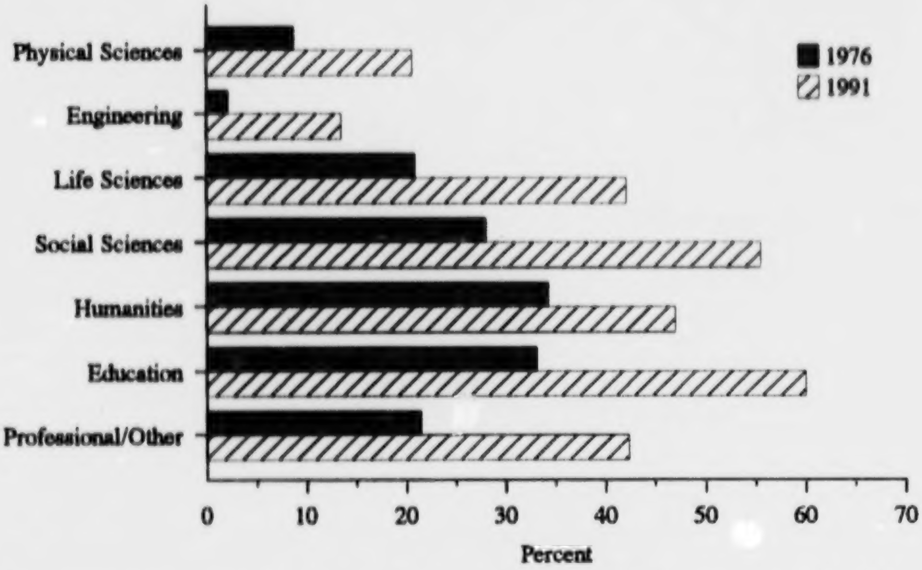
[3] In 1991, 74 percent of U.S. Hispanic women were white, 20.9 percent were of unknown race, 2 percent were black, 1.7 percent were Native American, and 1.4 percent were Asian. U.S. Hispanic men had a virtually identical racial distribution.

Field of Doctorate

Field Composition

Between 1976 and 1991, the number of U.S. women earning doctorates increased in all broad fields except for humanities (Table S-2).[4] Women made their greatest gains in engineering, rising from 34 in 1976 to 267 fifteen years later, an increase of nearly 700 percent. In 1991, U.S. women outnumbered men in two fields—social sciences and education—and achieved near parity in humanities (Figures S-1 and S-2). However, their numbers remained small in physical sciences and engineering. The one traditionally male field where women have made inroads is life sciences, which was 42 percent female in 1991, compared with 21 percent in 1976 (Table S-2 and Appendix Table B-3). It is interesting to note that only among U.S. blacks did women outnumber men in life sciences in 1991 (47 vs. 38).

FIGURE S-1 Percentage of doctorates awarded to U.S. women in each broad field, 1976 and 1991.



NOTE: Percentages are based on the number of doctorates awarded to U.S. citizens in each field. See Table S-2 for numbers of U.S. women in each field; see technical notes in Appendix C for rates of nonresponse to citizenship and race/ethnicity.

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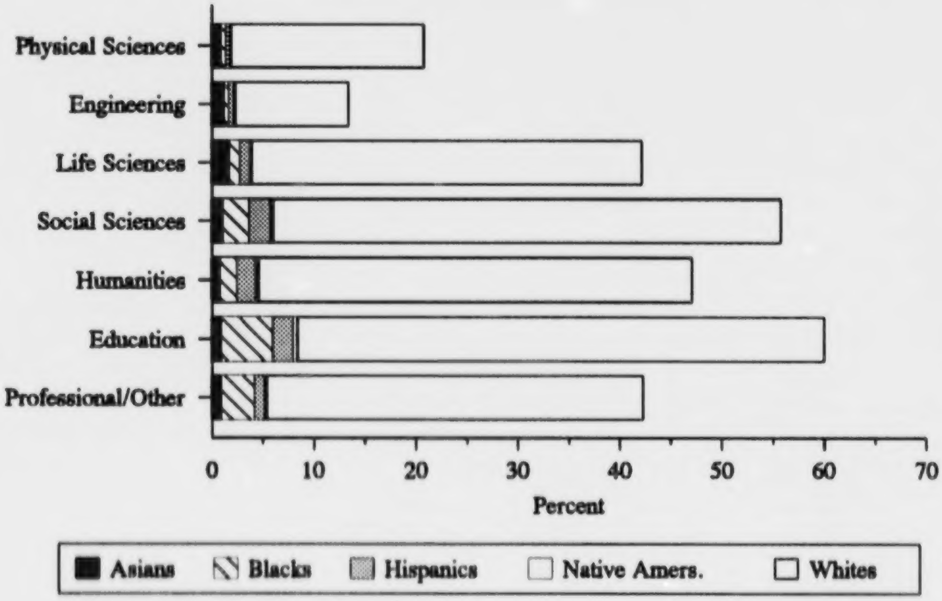
[4] "Broad" field refers to the seven fields the NRC profiles in *Summary Reports* and most standard tables. Readers should note that these fields may differ from those reported by federal sponsors of the survey. "Major" fields are the subfields that constitute the broad fields (e.g., biological sciences as a part of life sciences or psychology as a part of social sciences). For a list of these subfields, see the inside back cover of this report and the specialties list in Appendix D.

FIGURE S-2 Percentage of doctorates awarded to U.S. women in each broad field, by race/ethnicity, 1991.



NOTE: Percentages are based on the number of doctorates awarded to U.S. citizens in each field. See Table S-2 for numbers of U.S. women in each field. Recipients with unknown race/ethnicity are excluded from the computations. See Table S-3 for numbers of U.S. women in each field by race/ethnicity; see technical notes in Appendix C for rates of nonresponse to citizenship and race/ethnicity.

Field Selection

Although there were far fewer U.S. women than men in physical and life sciences and engineering in 1991, female Ph.D.s were much more likely to specialize in these fields today than 15 years ago, particularly in life sciences (Table S-2 for women and Appendix Table B-3 for men). In 1976, just over 12 percent of all women earned a doctorate in life sciences, but by 1991 this had increased to 18 percent. In contrast to these gains in life sciences, the proportion of women earning degrees in the combined fields of physical sciences and engineering remained quite small—under 10 percent for women of all racial/ethnic groups except Asians. Asian women were twice as likely as the other groups to have earned Ph.D.s in physical sciences and engineering.

Ranking the top three fields of U.S. female Ph.D.s shows that many continued to earn their degrees in traditionally female fields. In 1991, education was the top choice, followed by social sciences, and then humanities for three-quarters of all black, Hispanic, and Native American women. Asian and white women deviated from this pattern slightly. Two-thirds of Asian women chose either life sciences, education, or social sciences as Ph.D. fields. Well over two-thirds of white women also chose these fields although the ranking differed slightly with education first, social sciences second, and life sciences third.

The popularity of certain fields for U.S. female Ph.D.s has shifted considerably in the last 15 years (Table S-2). Since 1976, black, Hispanic, and Native American women have been much less likely to obtain education doctorates and much more likely to specialize in social sciences. In 1991, smaller proportions of white and Asian women pursued humanities than did in 1976. This decline was offset by increased Ph.D. production in all of the other fields listed in Table S-2, notably in engineering and physical sciences among white women and in engineering and professional/other fields among Asian women.

Examining the major field distribution of U.S. women doctorates reveals some interesting patterns (Table S-3 for women and Appendix Table B-4 for men). Biological sciences largely accounted for the unprecedented numbers of women earning Ph.D.s in life sciences. In 1991, over two-thirds of Ph.D.s awarded to women in life sciences were in biological sciences. Asian women were the most likely and black women the least likely to earn degrees in these fields. Black women's life sciences degrees were almost evenly divided between biological and health sciences. Of the health sciences doctorates awarded in 1991, nursing degrees were very common for all groups.

Much of the increase in female doctorates in social sciences since 1976 came from psychology. In 1991, over two-thirds of the 2,498 U.S. women earning Ph.D.s in social sciences specialized in psychology, particularly whites (1,568), blacks (75), and Hispanics (63). Further, a majority (63.0 percent) of all female psychology Ph.D.s specialized in clinical fields, especially blacks and whites.[5]

Degree-Granting Institutions

The next series of tables (S-4, S-5, and S-6) list the baccalaureate and doctorate institutions of U.S. female doctorate recipients by race/ethnicity and Carnegie Classification. The Carnegie Classification groups academic institutions into four broad categories based on the level of degree offered, the amount of federal monies awarded for research, and the comprehensiveness of mission: research universities; doctorate-granting universities; comprehensive universities and colleges; and liberal arts colleges.[6]

Briefly, research universities offer a broad range of undergraduate and graduate degree programs, place a premium on research, and annually receive between $12.5 and $33 million in federal research funds. Doctorate-granting institutions offer degrees from the baccalaureate to the Ph.D., but with a narrower scope and a weaker research emphasis than research universities. Comprehensive universities and colleges generally have undergraduate and graduate programs through the master's degree. These institutions award over half of their undergraduate degrees in professional programs such as business or engineering. Finally, liberal arts colleges are primarily undergraduate, four-year colleges that award over half of their baccalaureates in the arts and sciences.[7]

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[5] Throughout this section, statistics for Native American women are presented. However, because of their small numbers (55 Ph.D. recipients in 1991), these statistics may not provide robust or useful measures of Native American women's behavior, particularly for time series analyses.

[6] From the Carnegie Classification of Institutions of Higher Education, The Carnegie Foundation for the Advancement of Teaching, 1987.

Nearly 94 percent of all U.S. women earned their Ph.D.s at either research universities or doctorate-granting institutions (Table S-4 and Appendix Table B-5). However, the proportion of women earning their Ph.D.s at research universities has declined since 1976 for all but Hispanic and Native American women. Asian women were the most likely to have earned doctorates at research universities (78.8 percent), followed by white women (71.2 percent) and Hispanic women (69.7 percent). Whereas more than 60 percent of black and Native American women earned Ph.D.s at research universities, about 30 percent attended doctorate-granting institutions, which have a weaker research emphasis (as measured by federal research dollars awarded) than research universities. Only 14.3 percent of Asian women, 20.9 percent of Hispanic women, and 22.5 percent of white women earned Ph.D.s at doctorate-granting institutions.

Which institutions produce the most U.S. female Ph.D.s? Tables S-5 and S-6 list the leading baccalaureate and doctoral institutions of women who earned doctorates between 1987 and 1991. Asian and white women were the most likely to have earned their undergraduate and graduate degrees at research universities. Of the undergraduate institutions listed in Table S-5, all of those for white women and all but two of those for Asian women were research universities. In contrast, two-thirds of the leading undergraduate institutions of Native American women and one-half of those of Hispanic women were research universities. For U.S. black women earning doctorates between 1987 and 1991, nearly three-fourths of the leading baccalaureate institutions were comprehensive colleges and all but one of the institutions listed (Wayne State) were "Historically Black Colleges and Universities" (HBCUs).[8]

At the doctoral level, nearly all of the leading doctoral institutions of U.S. women were either research universities or doctorate-granting institutions (Table S-6). However, black, Hispanic, and Native American women had more doctorate-granting institutions on their lists than did white or Asian women. And lastly, two of the leading doctoral institutions of black female Ph.D.s were HBCU's (Clark Atlanta and Howard University).

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[7] The "other" category in the tables showing Carnegie Classifications are a diverse group of schools ranging from two-year colleges to professional schools such as law schools and business schools.

[8] By definition, HBCUs are the 106 institutions founded in the late 1800's and 1900s for the specific purpose of educating blacks. Baccalaureates are awarded by 90 of these schools.

Time-to-Degree

As discussed in the front section of this report, the time graduate students take to complete their doctorates has risen steadily since 1961. For U.S. women, the last 15 years have been no different; since 1976, registered time-to-degree (RTD) has increased 1.4 median years and total time-to-degree (TTD) has increased 3.5 years (Table S-7).

Time-to-degree is significantly longer when measured by TTD than when gauged by RTD; this is largely due to the different behaviors they measure. RTD gauges how long women take to complete their doctorate once they are registered in graduate school (it also includes time spent working on a master's—related or not to the Ph.D.—or enrollment in a nondegree program). TTD, on the other hand, measures the time between completion of the baccalaureate and completion of the doctorate (this also includes all calendar time a student is not enrolled in a university between the baccalaureate and doctorate). The following discussion of time-to-degree will be restricted to RTD because of its exclusive focus on time spent enrolled in graduate school.

The amount of registered time required to complete the Ph.D. is clearly related to field of specialization (Table S-8). U.S. women in physical sciences took the shortest amount of time (6.1 median years) to complete their degrees, whereas those pursuing humanities doctorates required the longest amount of time (8.8 median years). Because they were most likely to specialize in fields with short RTDs (e.g., physical sciences), Asian women had the shortest overall RTD (7.1 median years). Conversely, black women had the longest RTD (8.0 median years) because of their concentration in humanities and education. However, the difference in RTD between these two groups of women was small—less than one year.

Disaggregating the data by race/ethnicity and field reveals some interesting variations. The difference among racial/ethnic groups in RTD in physical sciences and engineering is quite small, no more than half a year. Hispanic women had the shortest RTD in physical sciences and black women had the shortest RTD in engineering (6.0 median years in both fields). The difference among groups widened in life sciences, social sciences, humanities, education, and professional/other fields. These differences ranged from less than one year between Hispanic (7.3) and black (8.1) women in professional/other fields to a nearly three-year difference between Hispanic (8.1) and Native American (11.0) women in humanities.

Examining variations in RTD across fields and by racial/ethnic groups shows that Hispanic women completed their doctorates in the shortest amount of time in over half of the broad fields presented in Table S-8. They had the shortest RTD in physical sciences, life sciences, humanities, and professional/other fields. Asian women, on the other hand, had the shortest RTD in social sciences and education and black women had the shortest RTD in engineering.[9]

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[9] Statistics pertaining to black women with Ph.D.s in engineering must be interpreted cautiously because of their small numbers (8 in 1991).

Financial Support

Question 17 on the survey form (asking respondents to indicate their primary source of support during graduate study) allows us to assess what kinds of financial support were most common for U.S. female Ph.D.s in 1991.[10] The type of primary financial support varies by field of specialization (Table S-9). University support was much more common in physical sciences, engineering, and life sciences, whereas personal resources were more typical in social sciences, humanities, education, and professional/other fields. Federal support was not the norm in any field listed in Table S-9 but was most commonly found in life sciences. However, the data reveal interesting differences among women within the same fields.

Personal Sources

More than half of all U.S. women who earned doctorates in 1991 relied on personal finances as the primary source of funding for their graduate studies. This is largely because of women's concentration in fields (such as education) where other types of financial support were less common. However, use of personal resources to finance graduate education varied by women's race/ethnicity. For example, although there were few black and Native American women Ph.D.s in physical sciences, they had the highest likelihood of using personal resources to finance their graduate studies in a field where university support was the norm. Another interesting racial/ethnic difference is found in the field of education. Although U.S. Asian women were the least likely overall of any racial/ethnic group to utilize personal sources, they had the highest percentage listing this type of support to finance their doctorate in education. In engineering, social sciences, and professional/other fields, white women were the most likely to rely on personal resources while pursuing the doctorate.

University Funding

Overall, 34.5 percent of U.S. female doctorate recipients reported university support as their primary source of support. Female Ph.D.s in physical and life sciences and engineering relied on university support as the primary financial resource, although this was less true in life sciences than in the other two fields. U.S. Asian women were the most likely (41.6 percent) to list this type of support as a primary source (due to their relatively high concentrations in the above-mentioned fields), followed by whites (34.9 percent) and Hispanics (32.3 percent). Native American and black women were the least likely to list this as their primary source of support (24.4 percent and 23.3 percent, respectively).

As with personal resources, not all U.S. women were as likely to receive university support in fields where this type of support is common. For example, of the small numbers of Hispanic women who earned engineering doctorates in 1991, only 30 percent reported university support as their primary financial resource compared with 75 percent of Asian women. Thus, even when women specialized in fields where university support is common, receipt of this type of financial support was not uniform across the various racial/ethnic groups.

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[10] The following discussion is limited to those U.S. women who provided this information (see technical note 11 for response rates to this question).

"Experience indicates that successful programs [for women] at the graduate level...are characterized by substantial faculty or mentor commitment."[11] Since university support is one mechanism institutions can utilize to attract women to and retain them in doctoral programs, it is interesting to examine the different types of university support.[12] University funds allocated in the form of research and teaching assistantships can, in theory, provide students a close working relationship with faculty members. On the other hand, graduate students who rely on fellowships may complete their studies without ever having had substantial contact or interaction with faculty.

Table S-10 lists the types of university support U.S. female Ph.D.s received in 1991. Overall, teaching assistantships were most common (42.7 percent), followed closely by research assistantships (39.3 percent). Fellowships, work-study, and other institutional sources were much less common (12.0 percent, 0.5 percent, and 5.5 percent, respectively). As with the broader categories of support, the type of university support varied by field and race/ethnicity. Research assistantships were more common in physical and life sciences and engineering; teaching assistantships were more typical in social sciences, humanities, education, and professional/other fields. Fellowships were not the main source of university support in any field but were more common in social sciences, humanities, and professional/other fields than in the other broad fields.

In 1991, U.S. Asian women were more likely than those in other groups to have reported university support as the primary source of support; research assistantships were the main type of university support for Asians. This is hardly surprising given their specialization in the fields where research assistantships are most common (e.g., physical and life sciences and engineering).

For U.S. black women, fellowships were the most common type of university support. These Ph.D.s were more likely than any other group to have received fellowships in all but two fields (life sciences and social sciences, where they came in second behind Hispanic women). And, in two fields where research assistantships are the norm—physical sciences and engineering—black women were significantly more likely than any other group of women to have received fellowships.

Overall, teaching assistantships were the most common form of university support for U.S. Hispanic and Native American female Ph.D.s because of their concentrations in humanities where teaching assistantships were most common. However, in fields where research assistantships are common (namely, engineering and life sciences), these groups of women tended to have research rather than teaching assistantships. For the majority of white female Ph.D. recipients, university support consisted of teaching assistantships (43.3 percent), followed closely by research assistantships (39.9 percent). The type of assistantship for white women was clearly related to field. For these Ph.D.s, research assistantships were most common in physical and life sciences and engineering, whereas teaching assistantships were more typical in social sciences, humanities, education, and professional/other fields.

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[11] Dix, L.S., and M. L. Matyas, eds., 1992. Science and Engineering Programs: On Target for Women? Washington, D.C.: National Academy Press.

[12] University support consists primarily of teaching assistantships, research assistantships (including federal research assistantships), and fellowships.

Federal Support

Only 6.3 percent of U.S. women listed federal resources as the primary source of support for graduate studies.[13] Federal support was more common as a primary source of support for U.S. women in life sciences and engineering than in the other broad fields. As a result, in 1991, U.S. Asian women were more likely than any other group to have listed federal support as the primary financial resource while pursuing the doctorate. However, there were some variations by race/ethnicity within broad fields. For example, although black women were the least likely to have earned Ph.D.s in physical sciences, they were the most likely to have received federal support in this field. They were also the most likely to have had federal support in social sciences and professional/other fields.

The data indicate that the types of financial support U.S. women received in 1991 varied not only by their field of specialization but by their race/ethnicity as well. Many women relied on personal funds to finance their graduate studies and, as a result, may not have had the routine faculty contact and interaction characterized by research and teaching assistants. Of the one-third of female Ph.D.s who reported university sources as the primary financial support for graduate studies, teaching assistantships were the most common form. Although teaching assistantships give students contact with faculty, they do not provide the research skills helpful in completing a dissertation. Research assistantships were the next most typical form of university support but were prevalent only in those fields where most women do not earn degrees (physical and life sciences and engineering). Finally, only for black women were fellowships the predominant source of university support. Although fellowships may give women the luxury of not having to work while studying, this type of support may preclude them from establishing the important mentor relationships with faculty found in teaching and research assistantships.

Debt

Over half of all U.S. women with doctorates in 1991 graduated with debt related to some part of their postsecondary education (Table S-11). Indebtedness was more prevalent among blacks, Hispanics, and Native Americans, over 60 percent of whom completed their Ph.D.s with debt in 1991. Asian and white women were slightly less likely to have incurred debt during postsecondary studies, 52.1 percent and 53.1 percent, respectively. Although one-quarter of all women had debts of $10,000 or more, this proportion was higher for Hispanics (35.0 percent), blacks (31.6 percent), and Native

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[13] Federal support includes fellowships, traineeships, the GI bill, and "other" unspecified resources from federal agencies.

Americans (27.3 percent). This may be related to the fact that for some of these women, notably blacks and Native Americans, personal resources (including loans) were the primary means by which they financed their graduate studies.

Disaggregating these data by field reveals some interesting patterns. For example, in education, which has the lowest debt rate of all the broad fields, significantly higher proportions of Native Americans (66.7 percent), Hispanics (58.5 percent), and blacks (50.6 percent) reported debt than did Asians (37 percent) or whites (36.3 percent). In addition, black women were more likely than other women to complete their studies with debt in all but three fields—engineering (where white women were the most likely) and life sciences and education (where Native Americans were the most likely).

Postgraduation Plans

What were the employment plans of U.S. women who earned doctorates in 1991? It is only possible to provide a snapshot in time of their potential postdoctoral employment or study plans because this question is asked when students file their dissertations. Thus, some do not yet know their postdoctoral status. However, of those U.S. female Ph.D.s who reported postgraduation plans in 1991, nearly three-quarters indicated definite commitments for either employment or study (Table S-12). Women with humanities doctorates were less likely than those in other fields to have definite postgraduation commitments. Among the various racial/ethnic groups, Native American women were the least apt to have definite postgraduation commitments in 1991 (68.5 percent compared with 73.5 percent for all women).

Most women who had definite postgraduation commitments planned to work (79.8 percent). Although trend data on U.S. female Ph.D.s with definite postgraduation commitments show a decline in employment commitments, more than three-quarters of women in every racial/ethnic group except Asians had definite employment commitments in 1991 (Table S-13). Asian women were less likely than other women to have postgraduation employment plans because of their high concentrations in life sciences, a field where postdoctoral study is common (Table S-14).

Of the U.S. female Ph.D.s in humanities, education, and professional/other fields, whites were the most likely to be employed, while in physical and life sciences, blacks had the highest proportion with definite employment plans.[14] Women with life sciences degrees, as mentioned, were more likely to pursue postdoctoral study than employment. This held true for women in every racial/ethnic group except blacks, who were much more likely than other life sciences Ph.D.s to have postgraduation work commitments.

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[14] Although Native American women were the most likely to be employed in professional/other fields, due to their small numbers in this field (N=3), this percentage distribution may not be very meaningful.

Employment Sector

Academe and "other" sectors were the top two choices for women Ph.D.s with definite postgraduation employment commitments, with some variation by field and race/ethnicity (Table S-15).[15]

Over half of all U.S. women reported employment commitments in academe in 1991, although this is down since 1976, when more than two-thirds planned to work in this sector. It is important to note that although the proportion of women planning to work in academe has decreased, their absolute numbers in this sector increased between 1976 and 1991. And while academe was the main work sector for most female Ph.D.s in 1991 (except for physical scientists and engineers), industry/self-employment and "other" sectors showed the largest increase during the last 15 years.

Disaggregating the data by field and race/ethnicity reveals that in 1991, U.S. women with humanities or professional/other degrees were the most likely to have plans to work in academe, followed next by those with life sciences Ph.D.s (Table S-16). In 1991, over 90 percent of women with humanities Ph.D.s, in every racial/ethnic group but whites, planned to work in this sector. In professional/other fields, the proportion of women with academic employment plans ranged from a low of 66.7 percent for Native Americans to a high of 90 percent for Asians. Finally, among women with life sciences doctorates, Asians were notably less likely and blacks were significantly more likely than other women to have employment commitments in academe.

The numbers of U.S. women with Ph.D.s reporting definite employment commitments in "other" sectors, such as elementary and secondary schools or nonprofit organizations, has risen since 1976 (Table S-15). This increase was largely driven by the influx of white women into this sector during the early 1980s. For example, the proportion of U.S. black women with employment commitments in "other" sectors actually declined from 30.6 percent in 1981 to 27.9 percent in 1991. Similarly, the proportion of Hispanic women who planned to work in "other" sectors peaked at 20.3 percent in 1986 and declined to 17.9 percent in 1991.[16]

Female doctorate recipients in social sciences and education were much more likely than those in any other field to have work commitments in "other" sectors in 1991 (Table S-16). Compared with other racial/ethnic groups, black female Ph.D.s in education had the highest proportion with work commitments in "other" sectors (recall that black women were more likely than other women to specialize in education).

In 1991, U.S. female Ph.D.s, particularly Hispanic women, were less likely than their predecessors in 1981 to have had government employment commitments (Table S-15). In fact, for all women, employment commitments in this sector were highest in 1981 and 1986, ranging from 14.2 percent for Hispanics in 1981 to 15.9 percent for this same group in 1986. In 1991, Asian women were the most likely to have government employment commitments (10.9 percent), followed by whites (8.1 percent), blacks (7.2

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[15] "Other" includes elementary and secondary schools and nonprofit organizations.

[16] Because of the small numbers of Native American women represented in Table S-16 (ranging from 4 in 1976 to 29 in 1991), the validity of their percentage distributions is limited.

percent), and Hispanics (5.4 percent). Among U.S. women Ph.D.s in 1991, those with degrees in engineering (17.8 percent) were the most likely, whereas those in humanities were the least likely (1.6 percent), to plan work in government (Table S-16).

The proportion of U.S. female Ph.D.s with commitments to work in industry/self-employment nearly tripled during the last 15 years (Table S-15). In 1991, Asian women were significantly more likely than other women to have work commitments in industry because of their concentration in physical sciences and engineering, fields with high levels of industrial/self-employment commitments (Table S-16).

Summary

The data from the 1991 Survey of Earned Doctorates show that, as a whole, women have made impressive gains in doctoral education since 1976. Yet, women are not a monolithic group and there are notable differences by race/ethnicity regarding field of specialization, median time-to-degree, financial support, and postgraduation plans. In spite of these differences, however, the 1991 cohort of U.S. female Ph.D.s can be characterized as follows:

- In 1991, 10,836 women obtained Ph.D.s, constituting 43.8 percent of U.S. doctorate recipients. Although unprecedented numbers of U.S. women earned doctorates, minority women accounted for a small proportion (5.1 percent) of all Ph.D.s awarded to U.S. citizens.

- In 1991, U.S. women outnumbered men in two of the seven broad fields—education and social sciences—but have made minimal progress into traditionally male-dominated fields such as physical sciences and engineering fields.

- In 1991, the top three fields for all U.S. female Ph.D.s were education, social sciences, and life sciences. However, humanities replaced life sciences for blacks, Hispanics, and Native Americans.

- The time it takes U.S. women to complete the Ph.D. (as measured by RTD) varied by field in 1991. Doctorate recipients in physical and life sciences and engineering took the shortest amount of time, whereas those in humanities and education took the longest.

- In 1991, most women listed personal resources as their primary sources of support, although this varied substantially by field and race/ethnicity. University support was most common in physical and life sciences and engineering fields, and was most prevalent among Asian female Ph.D.s, because of their specializations in those fields.

• In 1991, more than half of all U.S. female doctorate recipients reported that they had incurred debt related to their postsecondary studies. Black, Hispanic, and Native American women had the highest rate of indebtedness.

• Nearly three-quarters of all U.S. women had definite postgraduation commitments in 1991. Of these women, four out of five had definite employment commitments. Ph.D.s in education and professional/other fields were the most likely to have work plans (approximately 97 percent), whereas those in life sciences were the most likely to have postdoctoral study plans (about 56 percent).

• The employment sector of U.S. female Ph.D.s varied by their field of specialization. Women with doctorates in humanities, professional/other fields, and life sciences were more likely than those in other fields to have academic work plans, whereas women in physical sciences and engineering were most likely to have definite employment commitments in industry or for self-employment.

TABLE S-1 U.S. Female Ph.D.s, by Race/Ethnicity for Selected Years, 1976-1991

	1976	1981	1986	1991
All U.S. Women	6,842	8,701	9,445	10,836
Proportion of U.S. Ph.D.s	25.1	34.7	40.9	43.8
U.S. Women with Known Race/Ethnicity	6,631	8,403	9,314	10,741
Proportion of U.S. Ph.D.s*	25.3	35.0	41.1	44.0
Asian Women	90	150	183	293
Proportion of U.S. Ph.D.s*	0.3	0.6	0.8	1.2
Proportion of U.S. Female Ph.D.s†	1.4	1.8	2.0	2.7
Proportion of U.S. Asian Ph.D.s	26.9	32.3	34.5	38.5
Black Women	443	514	500	548
Proportion of U.S. Ph.D.s*	1.7	2.1	2.2	2.2
Proportion of U.S. Female Ph.D.s†	6.7	6.1	5.4	5.1
Proportion of U.S. Black Ph.D.s	40.5	50.7	60.8	58.7
Hispanic Women	87	189	269	350
Proportion of U.S. Ph.D.s*	0.3	0.8	1.2	1.4
Proportion of U.S. Female Ph.D.s†	1.3	2.2	2.9	3.3
Proportion of U.S. Hispanic Ph.D.s	25.6	40.7	47.1	49.4
Native American Women	9	29	41	55
Proportion of U.S. Ph.D.s*	0.0	0.1	0.2	0.2
Proportion of U.S. Female Ph.D.s†	0.1	0.3	0.4	0.5
Proportion of U.S. Native American Ph.D.s	22.5	34.1	41.4	43.0
White Women	6,002	7,521	8,321	9,495
Proportion of U.S. Ph.D.s*	22.9	31.3	36.7	38.9
Proportion of U.S. Female Ph.D.s†	90.5	89.5	89.3	88.4
Proportion of U.S. White Ph.D.s	24.6	34.2	40.3	43.4
U.S. Women with Unknown Race/Ethnicity	211	298	131	95

NOTE: See technical notes in Appendix C for a description of the racial/ethnic variable and for rates of nonresponse to the questions on citizenship status and race/ethnicity.

*Percentages are based on the total number of U.S. Ph.D.s with known race/ethnicity.
†Percentages are based on the total number of U.S. female Ph.D.s with known race/ethnicity.

TABLE S-2 Broad Field Selection of U.S. Female Ph.D.s, by Race/Ethnicity for Selected Years, 1976-1991

	All Fields	Physical Sci.*	Eng.	Life Sci.	Social Sci.	Human- ities	Educ.	Prof./ Other
	(Number of Doctorate Recipients)							
All U.S. Women								
1976	6,842	302	34	835	1,503	1,501	2,358	309
1981	8,701	371	53	1,308	1,975	1,338	3,240	416
1986	9,445	516	142	1,614	2,152	1,253	3,207	561
1991	10,836	712	267	1,951	2,498	1,480	3,255	673
Asians								
1976	90	14	2	23	12	18	19	2
1981	150	13	6	37	31	14	42	7
1986	183	23	6	62	29	20	34	9
1991	293	34	26	81	53	28	55	16
Blacks								
1976	443	6	0	31	57	38	288	23
1981	514	5	0	42	90	41	297	39
1986	500	7	4	36	94	42	280	37
1991	548	13	8	47	110	51	269	50
Hispanics								
1976	87	1	0	3	8	24	44	7
1981	189	5	0	14	39	43	77	11
1986	269	12	3	33	55	38	121	7
1991	350	15	10	44	95	60	110	16
Native Americans								
1976	9	0	0	0	0	1	6	2
1981	29	0	0	4	5	4	15	1
1986	41	4	1	12	8	1	10	5
1991	55	3	2	6	10	7	24	3
Whites								
1976	6,002	275	31	755	1,385	1,347	1,943	266
1981	7,521	334	43	1,163	1,758	1,190	2,691	342
1986	8,321	461	125	1,454	1,933	1,132	2,719	497
1991	9,495	641	216	1,749	2,214	1,318	2,777	580
Unknown Race/Ethnicity								
1976	211	6	1	23	41	73	58	9
1981	298	14	4	48	52	46	118	16
1986	131	9	3	17	33	20	43	6
1991	95	6	5	24	16	16	20	8

NOTE: See technical notes in Appendix C for rates of nonresponse to the question on race/ethnicity by field. See Appendix Table B-3 for comparable data on U.S. men.

*Includes mathematics and computer sciences.

TABLE S-3 Major Field Selection of U.S. Female Ph.D.s, by Race/Ethnicity, 1991 (in percent)

	All U.S. Women	Asians	Blacks	Hispanics	Native Amers.	Whites	Unknown Race/ Ethnicity
ALL FIELDS (No.)	**10,836**	**293**	**548**	**350**	**55**	**9,495**	**95**
Physical Sciences*	**6.6**	**11.6**	**2.4**	**4.3**	**5.5**	**6.8**	**6.3**
Engineering	**2.5**	**8.9**	**1.5**	**2.9**	**3.6**	**2.3**	**5.3**
Life Sciences	**18.0**	**27.6**	**8.6**	**12.6**	**10.9**	**18.4**	**25.3**
Biological Sciences	11.6	22.5	4.4	9.7	7.3	11.8	16.8
Health Sciences	5.0	4.4	4.0	2.3	3.6	5.2	6.3
Audiology/Speech Pathology	0.5	0.7	0.9	0.0	0.0	0.5	0.0
Nursing	2.6	1.7	1.3	0.9	1.8	2.8	1.1
Public Health/Epidemiology	1.0	1.0	1.3	0.6	0.0	1.0	4.2
Other Health Sciences	0.9	1.0	0.5	0.9	1.8	0.9	1.1
Agricultural Sciences	1.3	0.7	0.2	0.6	0.0	1.4	2.1
Social Sciences	**23.1**	**18.1**	**20.1**	**27.1**	**18.2**	**23.3**	**16.8**
Psychology	16.2	10.6	13.7	18.0	14.5	16.5	7.4
Clinical†	10.2	5.8	8.8	10.0	5.5	10.5	4.2
Nonclinical	6.0	4.8	4.9	8.0	9.1	6.1	3.2
Anthropology	1.6	0.3	0.5	1.4	1.8	1.7	1.1
Economics	0.9	2.7	0.2	1.1	0.0	0.8	3.2
Political Sci./Int'l. Relations	1.0	1.4	0.5	1.7	0.0	1.0	1.1
Sociology	1.6	1.0	2.6	2.6	0.0	1.5	1.1
Other Social Sciences	1.9	2.0	2.6	2.3	1.8	1.8	3.2
Humanities	**13.7**	**9.6**	**9.3**	**17.1**	**12.7**	**13.9**	**16.8**
History	1.9	1.0	2.2	0.3	0.0	1.9	4.2
Amer./Eng. Lang. & Lit.	3.7	1.4	3.5	1.7	1.8	3.9	2.1
Foreign Lang. & Lit.	1.7	1.0	0.9	8.9	1.8	1.5	3.2
Other Humanities	6.3	6.1	2.7	6.3	9.1	6.5	7.4
Education	**30.0**	**18.8**	**49.1**	**31.4**	**43.6**	**29.2**	**21.1**
Curriculum/Educ. Admin.	10.6	5.1	18.4	11.1	16.4	10.2	8.4
Curriculum & Instruction	4.5	2.7	5.8	6.9	10.9	4.4	3.2
Educ. Admin./Supervision	6.0	2.4	12.6	4.3	5.5	5.9	5.3
Teacher Educ./Teaching Fields	6.5	3.1	10.6	6.0	3.6	6.5	2.1
Other Education	12.9	10.6	20.1	14.3	23.6	12.5	10.5
Professional/Other	**6.2**	**5.5**	**9.1**	**4.6**	**5.5**	**6.1**	**8.4**
Business & Management	2.1	2.0	1.1	0.6	1.8	2.2	2.1
Communications	1.1	1.4	1.6	0.9	0.0	1.1	2.1
Other Professional Fields	2.7	1.7	5.7	2.9	1.8	2.5	3.2
Library/Archival Sciences	0.3	1.0	0.7	0.3	0.0	0.2	0.0
Social Work	1.3	0.7	2.9	2.0	1.8	1.2	2.1
Other	1.1	0.0	2.0	0.6	0.0	1.1	1.1
Other Fields	0.3	0.3	0.7	0.3	1.8	0.2	1.1

NOTE: See Table S-2 for numbers of women in each broad field. Refer to technical notes in Appendix C for rates of nonresponse to the question on race/ethnicity by field. See Appendix Table B-4 for comparable data on U.S. men.

*Includes mathematics and computer sciences.

†Comprises clinical, counseling, and school psychology.

TABLE S-4 Doctorate-Granting Institutions of U.S. Female Ph.D.s, by Race/Ethnicity of Recipient and Carnegie Classification of Institution for Selected Years, 1976-1991 (in percent)

	All Institutions (No.)	Research I & II	Doctorate-Granting I & II	Compre-hensive I & II	Liberal Arts I & II	Other Known Carnegie
All U.S. Women						
1976	6,842	76.6	21.1	0.4	0.7	1.2
1981	8,701	73.2	22.8	1.1	0.5	2.4
1986	9,445	72.9	23.0	1.1	0.5	2.5
1991	10,836	71.1	22.6	2.3	0.4	3.6
Asians						
1976	90	80.0	16.7	0.0	0.0	3.3
1981	150	78.0	18.7	0.7	0.7	2.0
1986	183	79.2	13.7	2.2	0.5	4.4
1991	293	78.8	14.3	1.4	0.0	5.5
Blacks						
1976	443	70.4	28.9	0.5	0.0	0.2
1981	514	69.6	28.0	1.0	0.4	1.0
1986	500	68.0	28.8	1.4	0.2	1.6
1991	548	65.0	29.2	3.7	0.6	1.7
Hispanics						
1976	87	69.0	31.0	0.0	0.0	0.0
1981	189	63.0	28.6	6.3	0.0	2.1
1986	269	65.8	26.4	4.1	0.0	3.7
1991	350	69.7	20.9	7.1	0.0	2.3
Native Americans						
1976	9	55.6	44.4	0.0	0.0	0.0
1981	29	55.2	41.4	0.0	0.0	3.4
1986	41	87.8	12.2	0.0	0.0	0.0
1991	55	61.8	30.9	3.6	1.8	1.8
Whites						
1976	6,002	76.9	20.7	0.3	0.7	1.3
1981	7,521	73.5	22.5	1.0	0.5	2.6
1986	8,321	73.2	22.8	1.0	0.5	2.5
1991	9,495	71.2	22.5	2.1	0.5	3.7
Unknown Race/Ethnicity						
1976						
1981	211	84.4	13.7	0.9	0.5	0.5
1986	298	76.5	19.5	1.3	0.7	2.0
1991	131	69.5	26.7	0.8	0.0	3.1
	95	78.7	16.0	2.1	0.0	3.2

NOTE: Percentages are based on the number of Ph.D.s whose doctorate institution had a 1987 Carnegie Classification. Institutions which did not exist at that time cannot be classified. In 1991, eight U.S. women (three blacks, four whites, and one woman of unknown race/ethnicity) received doctorates from one unclassified school—Walden University. See Appendix B-5 for comparable data on U.S. men.

TABLE S-5 Leading Baccalaureate Institutions of U.S. Female Ph.D.s, by Race/Ethnicity, 1987-1991 (ranked on number of Ph.D.s)

Institution	Number
Asians	
Univ. of California-Berkeley (R)	61
Univ. of Hawaii-Manoa (R)	59
Univ. of California-Los Angeles (R)	37
Yale Univ. (R)	16
Stanford Univ. (R)	16
Massachusetts Institute of Tech. (R)	15
Univ. of Illinois-Urbana (R)	15
Cornell Univ. (R)	13
Univ. of Michigan (R)	13
Univ. of California-Davis (R)	13
Univ. of California-Irvine (R)	13
Harvard Univ. (R)	12
Univ. of Washington (R)	12
California State Univ.-Los Angeles (C)	12
Wellesley College (LA)	10
Blacks	
Howard Univ. (R)	82
Spelman College (LA)	68
Hampton Univ. (C)	47
Tuskegee Univ. (C)	42
South Carolina State College (C)	35
Morgan State Univ. (C)	34
Wayne State Univ. (R)	33
North Carolina Central Univ. (C)	31
Jackson State Univ. (C)	31
Univ. of the District of Columbia (C)	30
Fisk Univ. (LA)	30
Southern Univ. (C)	30
Virginia State Univ. (C)	29
North Carolina A & T State Univ. (C)	26
Hispanics	
Univ. of Puerto Rico-Rio Piedras (C)	259
Univ. of Puerto Rico-Mayaguez (C)	35
Univ. of Texas-Austin (R)	24
Univ. of New Mexico (R)	24
Univ. of Miami (R)	22
California State Univ.-Los Angeles (C)	19
CUNY-City College (C)	15
CUNY-Hunter College (C)	14
Florida International Univ. (C)	14
Hispanics (cont.'d)	
Univ. of California-Santa Barbara (R)	14
Catholic Univ. of Puerto Rico (C)	14
New York Univ. (R)	13
Univ. of Florida (R)	13
Univ. of Texas-El Paso (C)	13
Univ. of California-Los Angeles (R)	13
Native Americans	
Oklahoma State Univ. (R)	8
Northeastern State Univ. (C)	7
Univ. of Oklahoma (R)	6
Univ. of California-Los Angeles (R)	6
Univ. of Wisconsin-Madison (R)	5
Univ. of Pittsburgh (R)	4
Pembroke State Univ. (C)	4
Univ. of Colorado-Boulder (R)	4
Arizona State Univ. (R)	4
Ball State Univ. (DG)	3
Indiana Univ. Bloomington (R)	3
Univ. of Michigan (R)	3
Univ. of Montana (DG)	3
Univ. of Arizona (R)	3
California State Univ.-Long Beach (C)	3
Univ. of California-Berkeley (R)	3
Whites	
Univ. of California-Berkeley (R)	539
Univ. of Michigan (R)	521
Univ. of Wisconsin-Madison (R)	443
Univ. of Illinois-Urbana (R)	422
Cornell Univ. (R)	417
Pennsylvania State Univ. (R)	402
Univ. of California-Los Angeles (R)	402
Ohio State Univ. (R)	359
Michigan State Univ. (R)	359
Univ. of Minnesota-Minneapolis (R)	355
Univ. of Texas-Austin (R)	341
Indiana Univ. Bloomington (R)	320
Univ. of Pennsylvania (R)	314
Rutgers Univ. (R)	299
Univ. of Maryland-College Park (R)	299

NOTE: Only U.S. institutions are included in this table. The Carnegie Classification appears within parentheses after the institution's name. Codes are as follows: R=research I and II; DG=doctorate-granting I and II; C=comprehensive I and II; LA=liberal arts I and II. See technical notes in Appendix C for rates of nonresponse to baccalaureate institution.

TABLE S-6 Leading Doctorate-Granting Institutions of U.S. Female Ph.D.s, by Race/Ethnicity, 1987-1991 (ranked on number of Ph.D.s)

Institution	Number
Asians	
Univ. of California-Berkeley (R)	51
Univ. of California-Los Angeles (R)	51
Univ. of Hawaii-Manoa (R)	39
Univ. of Washington (R)	25
Stanford Univ. (R)	25
Columbia Teachers College (DG)	24
Harvard Univ. (R)	21
Univ. of Southern California (R)	21
Univ. of Illinois-Urbana (R)	20
Univ. of Michigan (R)	18
Univ. of California-Davis (R)	18
Princeton Univ. (R)	17
Ohio State Univ. (R)	17
Univ. of Wisconsin-Madison (R)	17
Univ. of Maryland-College Park (R)	17
Blacks	
Clark Atlanta Univ. (DG)	88
Columbia Teachers College (DG)	77
Howard Univ. (R)	77
Nova Univ. (DG)	77
Univ. of Maryland-College Park (R)	71
Ohio State Univ. (R)	62
Southern Illinois Univ. (R)	48
Univ. of Michigan (R)	47
Univ. of N. Carolina-Chapel Hill (R)	47
Florida State Univ. (R)	46
Wayne State Univ. (R)	44
Univ. of Pittsburgh (R)	42
Temple Univ. (R)	41
George Washington Univ. (R)	38
Georgia State Univ. (DG)	37
Hispanics	
Univ. of Texas-Austin (R)	67
Univ. of Puerto Rico-Rio Piedras (C)	45
Texas A&M Univ. (R)	36
New York Univ. (R)	35
Univ. of California-Los Angeles (R)	35
Columbia Teachers College (DG)	34
Univ. of California-Berkeley (R)	34
Fordham Univ. (DG)	30
Univ. of Massachusetts-Amherst (R)	29
Hispanics (cont.'d)	
CUNY-Grad. Univ. Center (DG)	26
Rutgers Univ. (R)	26
Florida State Univ. (R)	24
Harvard Univ. (R)	23
Pennsylvania State Univ. (R)	23
Univ. of New Mexico (R)	23
Stanford Univ. (R)	23
Native Americans	
Oklahoma State Univ. (R)	11
Univ. of Washington (R)	10
Univ. of Oklahoma (R)	8
Pennsylvania State University (R)	5
Univ. of Pittsburgh (R)	5
Northern Arizona Univ. (DG)	5
Indiana Univ. Bloomington (R)	4
Michigan State Univ. (R)	4
Univ. of Michigan (R)	4
Univ. of Wisconsin-Madison (R)	4
Univ. of Minnesota-Minneapolis (R)	4
Univ. of N. Carolina-Greensboro (DG)	4
Brigham Young Univ. (DG)	4
Univ. of California-Berkeley (R)	4
Univ. of California-Los Angeles (R)	4
Stanford Univ. (R)	4
Whites	
Univ. of Texas-Austin (R)	848
Univ. of Minnesota-Minneapolis (R)	800
Univ. of Wisconsin-Madison (R)	783
Univ. of California-Berkeley (R)	774
New York Univ. (R)	699
Ohio State Univ. (R)	690
Univ. of California-Los Angeles (R)	671
Univ. of Maryland-College Park (R)	656
Univ. of Pennsylvania (R)	619
Univ. of Michigan (R)	584
Univ. of Washington (R)	564
Univ. of Pittsburgh (R)	555
Columbia Teachers College (DG)	551
Columbia Univ. (R)	536
Univ. of N. Carolina-Chapel Hill (R)	536

NOTE: The Carnegie Classification appears within parentheses after the institution's name. Codes are as follows: R=research I and II; DG=doctorate-granting I and II; C=comprehensive I and II.

TABLE S-7 Median Years to Degree for U.S. Female Ph.D.s., by Broad Field for Selected Years, 1976-1991

Field	1976	1981	1986	1991
Total All Fields				
Registered	6.2	6.7	7.4	7.6
Total	9.9	11.0	12.6	13.4
Physical Sciences*				
Registered	5.7	5.6	5.9	6.1
Total	6.4	6.6	6.9	7.0
Engineering				
Registered	4.9	6.0	5.9	6.2
Total	7.1	6.9	7.1	7.6
Life Sciences				
Registered	5.8	6.0	6.5	6.8
Total	7.3	7.8	9.2	9.9
Social Sciences				
Registered	5.9	6.5	7.4	7.6
Total	7.9	9.0	10.3	10.9
Humanities				
Registered	7.2	8.2	8.7	8.8
Total	10.0	11.4	13.1	13.3
Education				
Registered	6.1	6.9	7.9	8.2
Total	13.2	14.3	16.5	19.3
Professional/Other				
Registered	5.8	6.6	7.3	7.7
Total	11.3	12.2	13.9	15.6

NOTE: Medians are based on the number of individuals who have provided complete information about their postbaccalaureate education. See technical notes in Appendix C for rates of nonresponse to the applicable questions.

*Includes mathematics and computer sciences.

TABLE S-8 Median Years to Degree for U.S. Female Ph.D.s, by Race/Ethnicity and Broad Field, 1991

	All Fields	Phys. Sci.*	Eng.	Life Sci.	Social Sci.	Humanities	Educ.	Prof./ Other
RTD Years								
All U.S. Women	7.6	6.1	6.2	6.8	7.6	8.8	8.2	7.7
Asians	7.1	6.1	6.1	6.9	7.4	8.8	7.9	8.0
Blacks	8.0	6.5	6.0	7.4	8.5	9.5	8.1	8.1
Hispanics	7.7	6.0	6.2	6.5	7.6	8.1	8.8	7.3
Native Americans	7.6	†	†	7.0	7.8	11.0	8.6	†
Whites	7.5	6.1	6.2	6.7	7.5	8.8	8.2	7.7
TTD Years								
All U.S. Women	13.4	7.0	7.6	9.9	10.9	13.3	19.3	15.6
Asians	10.3	7.3	7.2	8.8	10.1	12.0	18.8	17.0
Blacks	16.8	7.8	8.5	12.8	11.4	14.1	20.5	15.5
Hispanics	12.8	7.1	7.2	9.8	11.0	12.8	18.7	15.0
Native Americans	14.6	†	†	15.0	9.0	13.3	22.5	†
Whites	13.4	7.0	7.7	9.8	10.9	13.4	19.2	15.5

NOTE: Medians are based on the number of individuals who have provided complete information about their postbaccalaureate education. Medians were computed wherever there were five or more Ph.D.s with known time-to-degree. See technical notes in Appendix C for rates of nonresponse to the applicable questions.

*Includes mathematics and computer sciences.

†A median was not computed because the number of Ph.D.s with known time-to-degree was fewer than five.

TABLE S-9 Primary Sources of Support for U.S. Female Ph.D.s, by Race/Ethnicity and Broad Field, 1991 (in percent)

	All Fields	Physical Sci.*	Eng.	Life Sci.	Social Sci.	Human- ities	Educa- tion	Prof./ Other
Total Known Primary Support (No.)								
All U.S. Women	9,013	644	249	1,673	2,088	1,163	2,637	559
Asians	221	28	20	59	40	19	45	10
Blacks	421	12	8	38	78	40	210	35
Hispanics	254	13	10	34	68	41	76	12
Native Americans	41	2	1	4	8	6	18	2
Whites	8,010	587	205	1,519	1,882	1,047	2,276	494
Unknown Race/Ethnicity	66	2	5	19	12	10	12	6
Personal								
All U.S. Women	56.2	17.5	19.7	32.6	60.1	49.0	82.7	62.4
Asians	43.9	14.3	10.0	22.0	55.0	63.2	84.4	60.0
Blacks	62.7	25.0	12.5	34.2	48.7	42.5	82.9	51.4
Hispanics	52.8	7.7	20.0	35.3	55.9	39.0	76.3	58.3
Native Americans	63.4	50.0	0.0	50.0	50.0	50.0	77.8	100.0
Whites	56.3	17.7	21.0	32.9	60.9	49.4	83.0	63.4
Unknown Race/Ethnicity	48.5	0.0	20.0	31.6	58.3	50.0	83.3	50.0
University								
All U.S. Women	34.5	73.3	58.2	43.5	33.0	45.2	13.7	33.3
Asians	41.6	78.6	75.0	45.8	35.0	26.3	11.1	40.0
Blacks	23.3	41.7	37.5	36.8	24.4	45.0	11.4	42.9
Hispanics	32.3	76.9	30.0	35.3	27.9	53.7	14.5	41.7
Native Americans	24.4	0.0	0.0	25.0	37.5	50.0	16.7	0.0
Whites	34.9	73.8	58.5	43.8	33.5	45.4	13.8	32.4
Unknown Race/Ethnicity	36.4	100.0	80.0	36.8	33.3	30.0	16.7	33.3
Federal								
All U.S. Women	6.3	6.4	10.0	20.2	4.8	2.3	0.9	1.4
Asians	11.3	3.6	5.0	28.8	7.5	5.3	4.4	0.0
Blacks	7.6	25.0	12.5	15.8	19.2	0.0	2.4	5.7
Hispanics	8.7	15.4	20.0	20.6	13.2	0.0	2.6	0.0
Native Americans	4.9	0.0	100.0	0.0	12.5	0.0	0.0	0.0
Whites	5.9	6.0	9.8	19.9	3.8	2.3	0.7	1.2
Unknown Race/Ethnicity	12.1	0.0	0.0	26.3	8.3	20.0	0.0	0.0
Other								
All U.S. Women	3.1	2.8	12.0	3.7	2.1	3.4	2.7	2.9
Asians	3.2	3.6	10.0	3.4	2.5	5.3	0.0	0.0
Blacks	6.4	8.3	37.5	13.2	7.7	12.5	3.3	0.0
Hispanics	6.3	0.0	30.0	8.8	2.9	7.3	6.6	0.0
Native Americans	7.3	50.0	0.0	25.0	0.0	0.0	5.6	0.0
Whites	2.8	2.6	10.7	3.3	1.8	3.0	2.5	3.0
Unknown Race/Ethnicity	3.0	0.0	0.0	5.3	0.0	0.0	0.0	16.7

NOTE: Numbers represent those Ph.D.s whose primary support is known. Percentages are based on these numbers. Percentages may not be meaningful in fields where the number of Ph.D.s is very small; this is particularly true for Native Americans. "Personal" includes loans as well as own earnings and contributions from the spouse/family. Federally funded research assistantships (RAs) are grouped under "University" because recipients of such support may not be aware of the actual source of funding. It is believed that many of these Ph.D.s are reporting their support as university RA instead of federal RA. "Other" support includes U.S. nationally competitive fellowships, business/employer funds, foreign government, state government, and other nonspecified sources. See technical notes in Appendix C for rates of nonresponse to this question.

*Includes mathematics and computer sciences.

TABLE S-10 Type of University Support for U.S. Female Ph.D.s, by Race/Ethnicity and Broad Field, 1991 (in percent)

	All University	Teaching Asst.	Research Asst.	Fellow-ship	Work-Study	Other Instl.
All Fields						
All U.S. Women	3,105	42.7	39.3	12.0	0.5	5.5
Asians	92	34.8	57.6	5.4	0.0	2.2
Blacks	98	27.6	17.3	34.7	6.1	14.3
Hispanics	82	48.8	24.4	19.5	0.0	7.3
Native Americans	10	50.0	20.0	10.0	0.0	20.0
Whites	2,799	43.3	39.9	11.3	0.4	5.2
Unknown Race/Ethnicity	24	41.7	50.0	4.2	0.0	4.2
Physical Sciences*						
All U.S. Women	472	35.6	58.3	5.3	0.0	0.8
Asians	22	31.8	68.2	0.0	0.0	0.0
Blacks	5	40.0	0.0	60.0	0.0	0.0
Hispanics	10	50.0	40.0	10.0	0.0	0.0
Native Americans	0	0.0	0.0	0.0	0.0	0.0
Whites	433	35.6	58.7	4.8	0.0	0.9
Unknown Race/Ethnicity	2	0.0	100.0	0.0	0.0	0.0
Engineering						
All U.S. Women	145	11.7	80.0	6.9	0.0	1.4
Asians	15	6.7	93.3	0.0	0.0	0.0
Blacks	3	33.3	33.3	33.3	0.0	0.0
Hispanics	3	33.3	66.7	0.0	0.0	0.0
Native Americans	0	0.0	0.0	0.0	0.0	0.0
Whites	120	11.7	79.2	7.5	0.0	1.7
Unknown Race/Ethnicity	4	0.0	100.0	0.0	0.0	0.0
Life Sciences						
All U.S. Women	727	26.1	58.9	10.6	0.3	4.1
Asians	27	29.6	63.0	7.4	0.0	0.0
Blacks	14	14.3	42.9	21.4	7.1	14.3
Hispanics	12	33.3	41.7	25.0	0.0	0.0
Native Americans	1	0.0	100.0	0.0	0.0	0.0
Whites	666	26.3	59.2	10.4	0.2	4.1
Unknown Race/Ethnicity	7	14.3	71.4	0.0	0.0	14.3

Social Sciences						
All U.S. Women	689	46.2	32.5	13.8	1.0	6.5
Asians	14	64.3	28.6	7.1	0.0	0.0
Blacks	19	36.8	26.3	31.6	0.0	5.3
Hispanics	19	26.3	26.3	36.8	0.0	10.5
Native Americans	3	0.0	0.0	33.3	0.0	66.7
Whites	630	46.8	33.2	12.5	1.1	6.3
Unknown Race/Ethnicity	4	50.0	25.0	25.0	0.0	0.0
Humanities						
All U.S. Women	526	73.2	2.1	20.5	0.0	4.2
Asians	5	60.0	0.0	33.3	0.0	20.0
Blacks	18	38.9	5.6	50.0	0.0	5.6
Hispanics	22	77.3	0.0	18.2	0.0	4.5
Native Americans	3	100.0	0.0	0.0	0.0	0.0
Whites	475	74.1	2.1	19.8	0.0	4.0
Unknown Race/Ethnicity	3	100.0	0.0	0.0	0.0	0.0
Education						
All U.S. Women	360	39.7	33.9	9.7	1.4	15.3
Asians	5	40.0	40.0	0.0	0.0	20.0
Blacks	24	8.3	16.7	33.3	8.3	33.3
Hispanics	11	54.5	18.2	9.1	0.0	18.2
Native Americans	3	66.7	33.3	0.0	0.0	0.0
Whites	315	41.0	35.9	8.3	1.0	14.0
Unknown Race/Ethnicity	2	100.0	0.0	0.0	0.0	0.0
Professional/Other						
All U.S. Women	186	55.9	23.7	11.8	1.6	7.0
Asians	4	50.0	25.0	25.0	0.0	0.0
Blacks	15	40.0	0.0	26.7	20.0	13.3
Hispanics	5	40.0	40.0	0.0	0.0	20.0
Native Americans	0	0.0	0.0	0.0	0.0	0.0
Whites	160	57.5	25.6	10.6	0.0	6.3
Unknown Race/Ethnicity	2	100.0	0.0	0.0	0.0	0.0

NOTE: Percentages may not be meaningful in fields where the number of Ph.D.s is very small; this is particularly true for Native Americans.

*Includes mathematics and computer sciences.

TABLE S-11 Cumulative Debt Related to Education for U.S. Female Ph.D.s, by Race/Ethnicity and Broad Field, 1991 (in percent)

	All Ph.D.s (No.)	Without Debt	With Debt	$5,000 or less	$5,001-$10,000	$10,001-$15,000	$15,001 or more
Total All Fields							
All U.S. Women	10,836	46.2	53.8	16.3	12.7	9.1	15.7
Asians	293	47.9	52.1	17.9	9.3	10.0	14.8
Blacks	548	39.7	60.3	15.9	12.8	8.1	23.5
Hispanics	350	37.9	62.1	16.6	10.5	14.6	20.4
Native Americans	55	36.4	63.6	23.6	12.7	5.5	21.8
Whites	9,495	46.9	53.1	16.2	12.9	8.9	15.0
Unknown Race/Ethnicity	95	46.6	53.4	12.5	13.6	10.2	17.0
Physical Sciences*							
All U.S. Women	712	41.3	58.7	21.1	17.6	9.9	10.1
Asians	34	45.5	54.5	21.2	18.2	9.1	6.1
Blacks	13	38.5	61.5	7.7	30.8	15.4	7.7
Hispanics	15	40.0	60.0	33.3	13.3	0.0	13.3
Native Americans	3	66.7	33.3	0.0	0.0	0.0	33.3
Whites	641	41.3	58.7	21.2	17.3	10.0	10.2
Unknown Race/Ethnicity	6	0.0	100.0	25.0	50.0	25.0	0.0
Engineering							
All U.S. Women	267	48.5	51.5	23.5	13.6	6.1	8.3
Asians	26	56.0	44.0	24.0	8.0	8.0	4.0
Blacks	8	50.0	50.0	25.0	25.0	0.0	0.0
Hispanics	10	70.0	30.0	0.0	10.0	0.0	20.0
Native Americans	2	50.0	50.0	0.0	0.0	50.0	0.0
Whites	216	47.7	52.3	24.3	14.5	5.6	7.9
Unknown Race/Ethnicity	5	0.0	100.0	40.0	0.0	20.0	40.0
Life Sciences							
All U.S. Women	1,951	40.4	59.6	20.0	16.2	11.1	12.3
Asians	81	43.2	56.8	23.5	12.3	12.3	8.6
Blacks	47	36.2	63.8	14.9	19.1	2.1	27.7
Hispanics	44	43.2	56.8	20.5	11.4	13.6	11.4
Native Americans	6	16.7	83.3	33.3	33.3	0.0	16.7
Whites	1,749	40.3	59.7	20.0	16.4	11.3	12.1
Unknown Race/Ethnicity	24	45.5	54.5	18.2	13.6	9.1	13.6

Social Sciences							
All U.S. Women	2,498	33.3	66.7	13.9	13.0	10.6	29.3
Asians	53	43.4	56.6	7.5	11.3	5.7	32.1
Blacks	110	24.8	75.2	17.4	8.3	10.1	39.4
Hispanics	95	28.0	72.0	12.9	6.5	20.4	32.3
Native Americans	10	30.3	70.0	10.0	10.0	0.0	50.0
Whites	2,214	33.6	66.4	13.9	13.6	10.4	28.5
Unknown Race/Ethnicity	16	37.5	62.5	12.5	12.5	6.3	31.3
Humanities							
All U.S. Women	1,480	44.0	56.0	17.1	14.4	11.1	13.4
Asians	28	46.4	53.6	17.9	3.6	17.9	14.3
Blacks	51	35.3	64.7	17.6	17.6	11.8	17.6
Hispanics	60	37.3	62.7	20.3	13.6	16.9	11.9
Native Americans	7	42.9	57.1	0.0	42.9	14.3	0.0
Whites	1,318	44.6	55.4	17.2	14.5	10.5	13.3
Unknown Race/Ethnicity	16	40.0	60.0	6.7	6.7	26.7	20.0
Education							
All U.S. Women	3,255	61.6	38.4	13.8	8.9	6.2	9.5
Asians	55	63.0	37.0	5.6	3.7	11.1	16.7
Blacks	269	49.4	50.6	14.4	10.6	6.8	18.6
Hispanics	110	41.5	58.5	14.2	12.3	12.3	19.8
Native Americans	24	33.3	66.7	41.7	4.2	4.2	16.7
Whites	2,777	63.7	36.3	13.7	8.7	5.8	8.1
Unknown Race/Ethnicity	20	77.8	22.2	5.6	11.1	0.0	5.6
Professional/Other							
All U.S. Women	673	46.2	53.8	16.4	11.0	7.8	18.6
Asians	16	31.3	68.8	50.0	0.0	0.0	18.8
Blacks	50	28.0	72.0	20.0	16.0	12.0	24.0
Hispanics	16	37.5	62.5	25.0	6.3	12.5	18.8
Native Americans	3	66.7	33.3	0.0	0.0	0.0	33.3
Whites	580	48.1	51.9	15.2	10.8	7.7	18.2
Unknown Race/Ethnicity	8	62.5	37.5	0.0	25.0	0.0	12.5

NOTE: Numbers include recipients whose debt status is unknown. Percentages are based on the number who responded to the question and may not be meaningful in fields where the number of Ph.D.s is very small; this is particularly true for Native Americans. Percentages for "with" and "without" debt add to 100.0. Percentages for levels of debt add to the total percentage of Ph.D.s "with debt." See technical notes in Appendix C for rates of nonresponse to this question.

*Includes mathematics and computer sciences.

TABLE S-12 U.S. Female Ph.D.s with Definite Postgraduation Plans, by Race/Ethnicity and Broad Field, 1991 (in percent)

	All U.S. Women	Asians	Blacks	His-panics	Native Amers.	Whites	Unknown Race/ Ethnicity
All Fields	73.5	70.5	73.2	69.6	68.5	73.8	71.1
Physical Sciences*	76.1	71.0	92.3	80.0	100.0	75.6	100.0
Engineering	74.2	75.0	75.0	80.0	50.0	75.4	20.0
Life Sciences	75.0	78.9	65.2	74.4	33.3	75.3	72.7
Social Sciences	71.4	70.0	72.1	63.4	60.0	71.7	75.0
Humanities	65.8	65.2	86.0	67.9	71.4	64.8	73.3
Education	75.9	58.3	71.9	70.7	73.9	76.8	72.2
Prof./Other	79.9	68.8	72.0	75.0	100.0	81.2	62.5

NOTE: See Table S-13 for numbers of Ph.D.s with definite postgraduation commitments. See technical notes in Appendix C for rates of nonresponse to the question on postgraduation status.

*Includes mathematics and computer sciences.

TABLE S-13 Postgraduation Commitments of U.S. Female Ph.D.s, by Race/Ethnicity for Selected Years, 1976-1991 (in percent)

	All U.S. Women	Asians	Blacks	His-panics	Native Amers.	Whites	Unknown Race/ Ethnicity
All Commitments (No.)							
1976	4,405	59	295	63	5	3,912	71
1981	5,920	96	355	137	19	5,160	153
1986	6,690	115	347	177	30	5,943	78
1991	7,728	189	386	231	37	6,821	64
Employment							
1976	86.0	67.2	95.8	98.4	80.0	85.3	85.9
1981	84.3	69.8	94.4	89.7	94.7	83.8	80.9
1986	81.5	60.5	91.8	80.2	72.4	81.4	78.2
1991	79.8	65.1	88.5	81.3	81.1	79.7	79.7
Study							
1976	14.0	32.8	4.2	1.6	20.0	14.7	14.1
1981	15.7	30.2	5.6	10.3	5.3	16.2	19.1
1986	18.5	39.5	8.2	19.8	27.6	18.6	21.8
1991	20.2	34.9	11.5	18.7	18.9	20.3	20.3

NOTE: Only Ph.D.s with definite commitments are included. Numbers include recipients who reported definite commitments but not type of plans (employment or study). Percentages are based only on the number of Ph.D.s whose specific plans are known. See technical notes in Appendix C for rates of nonresponse to the applicable questions and for further explanation of postgraduation plans.

TABLE S-14 Postgraduation Commitments of U.S. Female Ph.D.s, by Race/Ethnicity and Broad Field, 1991 (in percent)

	All U.S. Women	Asians	Blacks	His-panics	Native Amers.	Whites	Unknown Race/ Ethnicity
All Commitments (No.)	7,728	189	386	231	37	6,821	64
Physical Sciences*	531	22	12	12	3	476	6
Engineering	193	18	6	8	1	159	1
Life Sciences	1,427	60	30	32	2	1,287	16
Social Sciences	1,728	35	75	59	6	1,541	12
Humanities	932	15	43	38	5	820	11
Education	2,387	28	184	70	17	2,075	13
Prof./Other	530	11	36	12	3	463	5
Employment	79.8	65.1	88.5	81.3	81.1	79.7	79.7
Physical Sciences*	60.0	54.5	83.3	66.7	33.3	59.8	50.0
Engineering	77.7	77.8	100.0	62.5	100.0	77.4	100.0
Life Sciences	43.8	35.0	60.0	43.8	0.0	43.8	50.0
Social Sciences	80.0	71.4	82.7	81.4	83.3	79.9	91.7
Humanities	93.5	93.3	88.4	92.1	80.0	93.8	100.0
Education	96.7	96.4	94.5	95.7	94.1	97.0	92.3
Prof./Other	97.2	90.9	94.1	91.7	100.0	97.6	100.0
Study	20.2	34.9	11.5	18.7	18.9	20.3	20.3
Physical Sciences*	40.0	45.5	16.7	33.3	66.7	40.2	50.0
Engineering	22.3	22.2	0.0	37.5	0.0	22.6	0.0
Life Sciences	56.2	65.0	40.0	56.3	100.0	56.2	50.0
Social Sciences	20.0	28.6	17.3	18.6	16.7	20.1	8.3
Humanities	6.5	6.7	11.6	7.9	20.0	6.2	0.0
Education	3.3	3.6	5.5	4.3	5.9	3.0	7.7
Prof./Other	2.8	9.1	5.9	8.3	0.0	2.4	0.0

NOTE: Only Ph.D.s with definite commitments are included. Numbers include recipients who reported definite commitments but not type of plans (employment or study). Percentages are based only on the number of Ph.D.s whose specific plans are known and may not be meaningful in fields where the number of Ph.D.s is very small; this is particularly true for Native Americans. See technical notes in Appendix C for rates of nonresponse to the applicable questions and for further explanation of postgraduation plans.

*Includes mathematics and computer sciences.

TABLE S-15 Employment Sector of U.S. Female Ph.D.s with Postgraduation Commitments in the United States, by Race/Ethnicity for Selected Years, 1976-1991 (in percent)

	All U.S. Women	Asians	Blacks	His-panics	Native Amers.	Whites	Unknown Race/ Ethnicity
All Employed Ph.D.s (No.)							
1976	3,674	38	272	60	4	3,241	59
1981	4,930	66	335	121	18	4,268	122
1986	5,359	68	312	141	21	4,756	61
1991	6,051	120	337	187	29	5,328	50
Academe*							
1976	70.4	76.3	71.9	78.3	75.0	69.8	89.7
1981	57.6	60.0	53.6	64.2	44.4	57.8	56.3
1986	53.3	48.5	52.2	54.3	61.9	53.4	48.3
1991	57.2	54.6	60.1	70.1	51.7	56.6	63.3
Government							
1976	8.3	2.6	8.9	8.3	0.0	8.4	1.7
1981	11.2	13.8	10.6	14.2	22.2	11.1	10.9
1986	9.8	11.8	14.6	15.9	14.3	9.3	13.8
1991	8.1	10.9	7.2	5.4	17.2	8.1	8.2
Industry/Self-Employed							
1976	4.8	13.2	1.1	0.0	0.0	5.2	1.7
1981	10.1	18.5	5.2	6.7	5.6	10.5	9.2
1986	14.0	25.0	5.0	9.4	4.8	14.6	15.5
1991	12.7	21.8	4.8	6.5	10.3	13.3	10.2
Other†							
1976	16.4	7.9	18.1	13.3	25.0	16.6	6.9
1981	21.1	7.7	30.6	15.0	27.8	20.6	23.5
1986	22.9	14.7	28.2	20.3	19.0	22.8	22.4
1991	22.1	12.6	27.9	17.9	20.7	22.1	18.4

NOTE: Only Ph.D.s with definite commitments for employment are included. Foreign locations are excluded. Numbers include recipients whose employment sector is unknown; percentages are based on the number of Ph.D.s who reported employment sector. See technical notes in Appendix C for rates of nonresponse to this question.

*Academe includes two- and four-year colleges and universities, medical schools, and foreign universities. Elementary and secondary schools are included in "Other."

†"Other" is mainly composed of elementary and secondary schools and nonprofit organizations.

TABLE S-16 Employment Sector of U.S. Female Ph.D.s with Postgraduation Commitments in the United States, by Race/Ethnicity and Broad Field, 1991 (in percent)

	All U.S. Women	Asians	Blacks	Hispanics	Native Amers.	Whites	Unknown Race/ Ethnicity
Academe* (No.)	3,414	65	200	129	15	2,974	31
Physical Sciences†	45.4	41.7	60.0	62.5	0.0	45.2	0.0
Engineering	32.2	14.3	83.3	20.0	100.0	31.9	0.0
Life Sciences	61.5	30.0	81.3	64.3	0.0	61.8	75.0
Social Sciences	47.0	66.7	55.7	66.7	60.0	45.3	54.5
Humanities	88.0	100.0	97.4	97.1	100.0	86.8	90.9
Education	49.0	53.8	47.6	61.9	37.5	48.7	60.0
Prof./Other	78.9	90.0	75.0	81.8	66.7	79.1	60.0
Government (No.)	481	13	24	10	5	425	4
Physical Sciences†	10.9	16.7	0.0	0.0	100.0	10.8	33.3
Engineering	17.8	21.4	0.0	60.0	0.0	16.8	0.0
Life Sciences	12.6	30.0	18.8	14.3	0.0	11.8	12.5
Social Sciences	13.0	8.3	14.8	2.1	40.0	13.4	0.0
Humanities	1.6	0.0	0.0	0.0	0.0	1.8	0.0
Education	6.2	0.0	5.9	6.3	12.5	6.2	0.0
Prof./Other	4.0	0.0	6.3	0.0	0.0	3.6	40.0
Industry/Self-Employed (No.)	759	26	16	12	3	697	5
Physical Sciences†	41.2	41.7	30.0	37.5	0.0	41.6	66.7
Engineering	46.6	64.3	0.0	20.0	0.0	47.9	100.0
Life Sciences	16.4	25.0	0.0	7.1	0.0	16.8	12.5
Social Sciences	20.0	16.7	8.2	10.4	0.0	21.2	9.1
Humanities	3.3	0.0	0.0	0.0	0.0	3.7	0.0
Education	5.6	11.5	2.4	3.2	12.5	5.8	0.0
Prof./Other	8.8	0.0	12.5	0.0	33.3	8.8	0.0
Other‡ (No.)	1,318	15	93	33	6	1,162	9
Physical Sciences†	2.6	0.0	10.0	0.0	0.0	2.5	0.0
Engineering	3.4	0.0	16.7	0.0	0.0	3.4	0.0
Life Sciences	9.5	15.0	0.0	14.3	0.0	9.6	0.0
Social Sciences	20.0	8.3	21.3	20.8	0.0	20.1	36.4
Humanities	7.1	0.0	2.6	2.9	0.0	7.7	9.1
Education	39.2	34.6	44.1	28.6	37.5	39.2	40.0
Prof./Other	8.4	10.0	6.3	18.2	0.0	8.4	0.0

NOTE: Only Ph.D.s with definite commitments for employment are included. Foreign locations are excluded. Numbers include recipients whose employment sector is unknown. Percentages are based on the number of Ph.D.s who reported employment sector and may not be meaningful in fields where the number of Ph.D.s is very small; this is particularly true for Native Americans. See technical notes in Appendix C for rates of nonresponse to this question.

*Academe includes two- and four-year colleges and universities, medical schools, and foreign universities. Elementary and secondary schools are included in "Other."

†Includes mathematics and computer sciences.

‡"Other" is mainly composed of elementary and secondary schools and nonprofit organizations.

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APPENDIX A: The Seven Basic Tables, 1991

Appendix A includes the following seven tables:

A-1 Number of Doctorate Recipients, by Gender and Subfield, 1991
A-2 Number of Doctorate Recipients, by Citizenship, Race/Ethnicity, and Subfield, 1991
A-3 Statistical Profile of Doctorate Recipients, by Major Field, 1991
A-4 Statistical Profile of Doctorate Recipients, by Race/Ethnicity and Citizenship, 1991
A-5 Sources of Graduate School Support for Doctorate Recipients, by Broad Field and Gender, 1991
A-6 State of Doctoral Institution of Doctorate Recipients, by Broad Field and Gender, 1991
A-7 Institutions Granting Doctorates, by Major Field, 1991

*** IMPORTANT NOTICE ***

Because of recent increases in the survey response rate, data on citizenship and race/ethnicity for 1990 and 1991 are not comparable to data for earlier years. During the 1980s, response to the Survey of Earned Doctorates fell from 96.2 percent to 91.4 percent. (Note: These rates represent the proportion of questionnaires completed by doctorate recipients; forms completed by either the doctoral institution or NRC staff are not included in the overall response rate because they contain minimal information.) The downward trend was reversed in 1990 when response rose nearly two percentage points above the 1989 rate. It increased yet another point in 1991, reaching 94.3 percent.

Item response rates showed a parallel improvement—a natural consequence of the increase in the overall survey response but also partially because of questionnaire revisions and follow-ups for missing pieces of information. New follow-up procedures instituted in 1990 had an especially strong impact on citizenship and racial/ethnic data for that year. However, since responses to the follow-ups were not received until *after* closure of the 1990 survey, they were not included in the data presented in *Summary Report 1990*. The updated 1990 numbers reflecting follow-up responses are shown in Appendix Table B-2 (page 98) in this year's report. The most significant adjustment was to the numbers of black Ph.D.s—an increase of 8.3 percent among those who were U.S. citizens and 4.7 percent among temporary residents. The data for 1991 will likewise be subject to some revision over the next year, and any adjustments will be presented in next year's report. Readers should keep in mind that fluctuations in response rates affect numerical trends and that 1990 and 1991 data on citizenship and race/ethnicity, in particular, are not comparable to earlier data.

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TABLE A-1 and TABLE A-2: These tables display data for the most recent year by subfield of doctorate. The subfields correspond to the fields on the questionnaire's Specialties List located at the back of this report. Field groupings may differ from those in reports published by federal sponsors of the Survey of Earned Doctorates (SED). See inside the back cover for a description of field groupings as reported in these tables. The "general" field categories—e.g., "chemistry, general"—include individuals who either received the doctorate in the general subject area or did not indicate a particular specialty field. The "other" field categories—e.g., "chemistry, other"—include individuals whose specified doctoral discipline was not among the specialty fields.

Table A-1 presents data by doctoral specialty and gender. Table A-2 displays doctoral specialty by citizenship and race/ethnicity. See the explanatory note on Table A-4 for a detailed description of the racial/ethnic variable. ***See the shaded box on page 63 for important information on recent increases in response rates and their impact on time-series data.***

TABLE A-3: Table A-3 is composed of three two-page tables. The first table includes data on *all* doctorate recipients from the most recent year; the other two tables present the same data by gender. Field groupings may differ from those in reports published by federal sponsors of the SED. See inside the back cover for a description of field groupings as reported in these tables; see the questionnaire's Specialties List at the back of the report for the names and codes of the subfields included. Terms requiring definition are as follows:

- *Median Age at Doctorate*: One-half received the doctorate at or before this age. A recipient's age is derived by subtracting the year of birth from the calendar year of doctorate. Months are not included in the computation.

- *Percentage with Master's*: The percentage of doctorate recipients in a field who received a master's degree in any field before earning the doctorate.

- *Median Time Lapse*: "Total Time" refers to total calendar time elapsed between the year of baccalaureate and the year of doctorate; "Registered Time" refers to the total time registered in a university between baccalaureate and doctorate. Enrollment includes years of attendance not related to a recipient's doctoral program. Months are excluded from the computations because they are often not reported by the recipient.

Each year's doctorate recipients provide information on postgraduation employment or study plans in response to items 20 and 21 on the survey form. Since the questionnaire is filled out around the time the doctorate is awarded, a recipient's plans are subject to change. However, comparisons with the longitudinal Survey of Doctorate Recipients have shown these data to be reasonable predictors of actual employment status in the year following the doctorate (see the discussion of postgraduation plans on page 112 of Appendix C). The postgraduation plans of doctorate recipients are grouped as follows: "Postdoctoral Study Plans" (fellowship, research associateship, traineeship, other), "Planned Employment" (educational institution, industry, etc.), or "Postdoctoral Plans Unknown." These categories include recipients who were still negotiating or seeking positions at the time of survey completion, as well as those whose plans were definite. The sum of these lines equals 100 percent for each column, with allowance for rounding: for example, 51.4 percent of all chemists had postdoctoral study plans, 41.0 percent planned to be employed, and 7.6 percent did not report their postgraduation plans, totalling 100.0 percent. The study and employment rows are further subdivided. The data on study plans show that 24.0 percent of all chemists planned to pursue postdoctoral fellowships; 26.2 percent, research associateships; 0.5 percent, traineeships; and 0.7 percent, some other form of postdoctoral study. These percentages sum to 51.4 percent, which is the proportion of chemists who reported plans for postdoctoral study. The employment row is similarly subdivided; the percentages, listed by type of employer, show that a total of 41.0 percent planned employment. The category for educational institutions includes elementary and secondary schools as well as colleges and universities, and the category for government includes military service.

The four lines of data beginning with "Definite Postdoctoral Study" distinguish between individuals who had definite postgraduation plans at the time of survey completion (item 20: "Am returning to, or continuing in, predoctoral employment" or "Have signed contract or made definite commitment") and those who were still seeking employment or postdoctoral study (item 20: "Am negotiating with one or more specific organizations," "Am seeking position but have no specific prospects," or "Other"). These four lines, when added to the prior line, "Postdoctoral Plans Unknown," total 100 percent with allowance for rounding. The two lines, "Definite Postdoctoral Study" and "Seeking Postdoctoral Study," add to give the percentage for "Postdoctoral Study Plans"; the two lines, "Definite Employment" and "Seeking Employment," add to give the percentage for "Planned Employment After Doctorate."

Percentages showing the distribution of doctorate recipients by postdoctoral work activity and region of employment are based only on the number of recipients who had *definite* employment commitments at the time they completed the questionnaire. These percentages exclude recipients who planned postdoctoral study (as described above) and recipients who were still *seeking* employment at the time they completed the questionnaire. (Note that the rows on postdoctoral study and employment plans discussed in the preceding paragraph *include* individuals whose plans were not definite). Unfortunately, questionnaire revisions beginning in 1990 appear to have resulted in higher rates of nonresponse to the item on work activity than in previous years. The nonresponse rate in 1991 was 13.9 percent, compared with only 6.2 percent in 1989. Nonresponse was especially high among recipients planning to work in educational institutions, thereby affecting the percentages in teaching and administration.

TABLE A-4: Table A-4 contains data by race/ethnicity (first included in *Summary Report 1973*) and by citizenship for selected variables from Tables A-3 and A-5. Field groupings may differ from those in reports published by federal sponsors of the SED.

See inside the back cover for a description of field groupings as reported in these tables; refer to the questionnaire's Specialties List at the back of the report for the names and codes of the subfields included. ***See the shaded box on page 63 for important information on recent increases in response rates and their impact on time-series data.***

The racial/ethnic question has undergone several revisions over the years. In 1977, it was modified to correspond to a standard question format recommended by the Federal Interagency Committee on Education and adopted by the Office of Management and Budget (OMB) for use in federally sponsored surveys; an explanation of the effect of these changes is detailed on page 13 of *Summary Report 1977.* (Note: Changes in the OMB guidelines prompted the moving of persons having origins in the Indian subcontinent from the white category to the Asian category.) In 1980, the item was further revised in two ways: (1) the Hispanic category was subdivided into Puerto Rican, Mexican American, and "other" Hispanic to provide more detail for users of the racial/ethnic data, and (2) respondents were asked to check only one racial category. (Before 1980, doctorate recipients could check more than one category to indicate their race. However, when the data were compiled, all persons who checked American Indian, Asian, or Hispanic and also checked white were included in the minority group category. Those who checked black and any other category were designated as black.) The item was modified again in 1982 to separate the questions on race and ethnicity. Since then, respondents have been asked to first check one of the four racial group categories (American Indian, Asian, black, or white) and to then indicate whether or not they are Hispanic. In this table, Ph.D.s who reported Hispanic heritage, regardless of their racial designation, are included in one of three Hispanic groups: Puerto Rican, Mexican American, or Other Hispanic. The remaining survey respondents are then counted in the respective racial groups. (Note: Doctorate recipients who checked the category "American Indian or Alaskan Native" are identified as Native American in this report.)

In the section on "Graduate School Support," a recipient counts in more than one category if support was received from multiple sources. Because a student counts once for each source of support, the vertical percentages sum to more than 100 percent. See the explanatory note on Appendix Table A-5 for further detail. (Data on the *primary* source of support for doctorate recipients are presented in the body of the report.)

The other sections of Table A-4 correspond to many of those in Appendix Table A-3. The reader is referred to the explanatory note on Table A-3 for additional information.

TABLE A-5: Table A-5 displays data reported in item 17 on sources of financial support received during graduate school, by broad field and gender. Field groupings may differ from those in reports published by federal sponsors of the SED. See inside the back cover for a description of field groupings as reported in this table; see the questionnaire's Specialties List at the back of the report for the names and codes of the subfields included.

In this table, a recipient counts in more than one category if support was received from multiple sources. Because a student counts once for each source of support, the vertical percentages sum to more than 100 percent. (Data on the *primary* source of support for doctorate recipients are presented in the body of the report.)

As in last year's report, federal research assistantships (RAs) are aggregated with university RAs and shown under "university." Consequently, percentages for university support appear higher and federal support lower than in reports before 1990, making it inadvisable to compare results from the 1990 and 1991 surveys with those from earlier years. The inconsistency of trend data on federal RAs may be caused by a lack of awareness on the part of many Ph.D.s as to the true source of their RA funding, which then results in the missreporting of this type of support as university rather than federal.

The data should be interpreted as follows: 156 male doctorate recipients in the physical sciences in 1991 reported financial support from federal fellowships or traineeships during graduate school. This number is 3.2 percent of the male physical sciences doctorates who answered the question and 13.6 percent of the males in all fields who reported federal fellowship or traineeship support.

TABLE A-6: This table shows, by broad field and gender, the number of persons receiving a doctorate in the most recent year from institutions in each of the 50 states, the District of Columbia, and Puerto Rico. Field groupings may differ from those in reports published by federal sponsors of the SED. See inside the back cover for a description of field groupings as reported in this table; see the questionnaire's Specialties List at the back of the report for the names and codes of the subfields included.

TABLE A-7: This table displays data by doctorate-granting institution and major field. It includes all institutions in the United States (the 50 states, the District of Columbia, and Puerto Rico) that awarded doctoral degrees in the most recent year. Field groupings may differ from those in reports published by federal sponsors of the SED and from departmental designations at institutions. See inside the back cover for a description of field groupings as reported in this table; see the questionnaire's Specialties List at the back of the report for the names and codes of the subfields included.

APPENDIX TABLE A-1 Number of Doctorate Recipients, by Gender and Subfield, 1991

Subfield of Doctorate	Number of Doctorates		
	Total	Men	Women
TOTAL ALL FIELDS	37451	23686	13765
PHYSICAL SCIENCES	6276	5122	1154
MATHEMATICS	1040	846	194
Applied Mathematics	192	165	27
Algebra	72	56	16
Analysis and Functional Analysis	132	111	21
Geometry	66	61	5
Logic	23	22	1
Number Theory	30	22	8
Math Probability and Statistics	206	150	56
Topology	57	39	18
Computing Theory and Practice	19	16	3
Operations Research	16	12	4
Mathematics, General	182	156	26
Mathematics, Other	45	36	9
COMPUTER SCIENCE	797	681	116
Computer Sciences	719	623	96
Information Sciences and Systems	78	58	20
PHYSICS AND ASTRONOMY	1408	1256	152
Astronomy	50	43	7
Astrophysics	75	69	6
Acoustics	12	10	2
Atomic and Molecular	76	72	4
Electron	1	1	
Elementary Particles	182	162	20
Fluids	14	14	
Nuclear Structure	66	59	7
Optics	84	71	13
Plasma	58	56	2
Polymer	17	14	3
Solid State	371	330	41
Physics, General	247	218	29
Physics, Other	155	137	18
CHEMISTRY	2194	1687	507
Analytical	303	221	82
Inorganic	259	186	73
Nuclear	14	10	4
Organic	537	429	108
Pharmaceutical	82	56	26
Physical	363	277	86
Polymer	111	87	24
Theoretical	45	38	7
Chemistry, General	407	337	70
Chemistry, Other	73	46	27
EARTH, ATMOS, & MARINE SCI	837	652	185
Atmospheric Physics and Chemistry	20	18	2
Atmospheric Dynamics	21	18	3
Meteorology	31	24	7
Atmos and Meteorological Sci, Gen	26	24	2
Atmos and Meteorological Sci, Other	10	9	1
Geology	191	157	34
Geochemistry	63	44	19
Geophysics and Seismology	113	96	17
Paleontology	24	17	7
Mineralogy, Petrology	36	21	15
Stratigraphy, Sedimentation	29	21	8
Geomorphology and Glacial Geology	18	16	2
Applied Geology	1	1	
Geological Sciences, General	34	23	11
Geological Sciences, Other	36	26	10
Environmental Sciences	35	22	13
Hydrology and Water Resources	16	14	2
Oceanography	85	62	23
Marine Sciences	27	25	2
Physical Sciences, Other	21	14	7
ENGINEERING	5212	4760	452
Aerospace, Aeronautic & Astronautic	207	200	7
Agricultural	84	76	8
Bioengineering and Biomedical	149	122	27
Ceramic	58	48	10
Chemical	620	548	72
Civil	509	479	30
Communications	21	19	2
Computer	178	169	9
Electrical, Electronics	1206	1140	66
Engineering Mechanics	113	106	7
Engineering Physics	23	21	2
Engineering Science	42	40	2
Environmental Health Engineering	64	55	9
Industrial	163	146	17
Materials Science	362	306	56
Mechanical	761	711	50
Metallurgical	70	62	8
Mining and Mineral	38	32	6
Naval Architecture, Marine Eng	5	5	
Nuclear	107	103	4
Ocean	21	20	1
Operations Research	76	54	22
Petroleum	28	27	1
Polymer	42	35	7
Systems Engineering	48	44	4
Engineering, General	78	72	6
Engineering, Other	139	120	19
LIFE SCIENCES	6928	4254	2674
BIOLOGICAL SCIENCES	4642	2883	1759
Biochemistry	762	477	285
Biophysics	99	73	26
Bacteriology	11	6	5
Plant Genetics	23	18	5
Plant Pathology	50	38	12
Plant Physiology	65	46	19
Botany, Other	105	67	38
Anatomy	77	46	31
Biometrics and Biostatistics	59	30	29
Cell Biology	150	87	63
Ecology	190	130	60
Developmental Biology/Embryology	37	17	20
Endocrinology	33	17	16
Entomology	138	103	35
Immunology	177	101	76
Molecular Biology	481	299	182
Microbiology	373	223	150
Neurosciences	239	151	88
Nutritional Sciences	106	35	71
Parasitology	20	13	7
Toxicology	86	56	30
Human and Animal Genetics	160	89	71
Human and Animal Pathology	120	75	45
Human and Animal Pharmacology	262	172	90
Human and Animal Physiology	272	170	102
Zoology, Other	126	87	39
Biological Sciences, General	278	166	112
Biological Sciences, Other	143	91	52
HEALTH SCIENCES	1049	379	670
Audiology and Speech Pathology	90	22	68
Environmental Health	37	22	15
Public Health	133	56	77
Epidemiology	115	52	63
Nursing	325	12	313
Pharmacy	113	74	39
Rehabilitation/Therapeutic Services	17	7	10
Veterinary Medicine	56	44	12
Health Sciences, General	29	17	12
Health Sciences, Other	134	73	61
AGRICULTURAL SCIENCES	1237	992	245
Agricultural Business & Mgmt	1	1	
Agricultural Economics	165	129	36
Animal Breeding and Genetics	18	16	2
Animal Nutrition	57	47	10
Dairy Science	19	15	4
Poultry Science	13	12	1
Fisheries Science	39	35	4
Animal Sciences, Other	91	72	19
Agronomy	117	106	11
Plant Breeding and Genetics	69	59	10
Plant Pathology	90	64	26
Plant Protection-Pest Mgmt	2	2	
Plant Sciences, Other	17	13	4
Food Engineering	12	10	2
Food Sciences, Other	137	91	46
Soil Chemistry/Microbiology	24	18	6
Soil Sciences, Other	78	67	11
Horticulture Science	78	59	19

NOTE: Field groupings may differ from those in reports published by federal sponsors of the Survey of Earned Doctorates. See inside the back cover for a description of fields as reported in this table. Refer also to the explanatory note about this table in front of Appendix A.

Subfield of Doctorate	Number of Doctorates		
	Total	Men	Women
Forest Biology	17	14	3
Forest Engineering	2	1	1
Forest Management	22	18	4
Wood Science	16	14	2
Renewable Natural Resources	19	16	3
Forestry & Related Sci, Other	45	40	5
Wildlife/Range Management	59	51	8
Agriculture, General	3	2	1
Agriculture, Other	27	20	7
SOCIAL SCIENCES (INCL PSYCH)	6127	3101	3026
Anthropology	340	131	209
Area Studies	23	19	4
Criminology	35	17	18
Demography	27	11	16
Economics	853	680	173
Econometrics	24	19	5
Geography	108	75	33
International Relations	88	64	24
Political Science and Government	434	316	118
Public Policy Studies	111	73	38
Sociology	466	235	231
Statistics	31	21	10
Urban Studies	89	68	21
Social Sciences, General	36	19	17
Social Sciences, Other	222	97	125
PSYCHOLOGY	3240	1256	1984
Clinical	1302	462	840
Cognitive	94	48	46
Comparative	7	2	5
Counseling	495	189	306
Developmental	156	36	120
Experimental	142	78	64
Educational	110	46	64
Industrial and Organizational	142	66	76
Personality	13	9	4
Physiological	45	24	21
Psychometrics	9	6	3
Quantitative	7	5	2
School	82	25	57
Social	147	61	86
Psychology, General	321	139	182
Psychology, Other	168	60	108
HUMANITIES	4094	2190	1904
History, American	250	148	102
History, European	126	75	51
History of Science	27	16	11
History, General	123	80	43
History, Other	132	92	40
Classics	55	31	24
Comparative Literature	150	65	85
Linguistics	227	117	110
Speech, Debate, and Rhetoric	85	50	35
Letters, General	17	11	6
Letters, Other	44	18	26
American Studies	92	36	56
Archeology	33	13	20
Art History and Criticism	125	46	79
Music	584	359	225
Philosophy	285	206	79
Religion	183	141	42
Theatre	90	47	43
LANGUAGE AND LITERATURE	1351	569	782
American	253	111	142
English	600	259	341
French	99	32	67
German	71	33	38
Italian	31	14	17
Spanish	172	61	111
Russian	25	12	13
Slavic	14	5	9
Chinese	19	10	9
Japanese	7	3	4
Hebrew	11	8	3
Arabic	4	3	1
Other Languages	45	18	27
Humanities, General	29	13	16
Humanities, Other	86	57	29
EDUCATION	6397	2679	3718
Curriculum and Instruction	803	258	545
Educational Admin and Supervision	1409	715	694
Educational Leadership	473	218	255
Educational Media	73	34	39
Educational Statistics and Research	79	34	45
Educational Testing, Eval and Meas	31	18	13
Educational Psychology	321	114	207
School Psychology	90	35	55
Social Foundations	108	50	58
Special Education	226	60	166
Student Counseling & Personnel Serv	269	113	156
Higher Education Research	344	157	187
Pre-elementary Education	86	12	74
Elementary Education	73	17	56
Secondary Education	40	14	26
Adult and Continuing Education	208	85	123
TEACHING FIELDS	970	417	553
Agricultural Education	49	38	11
Art Education	28	7	21
Business Education	32	13	19
English Education	58	15	43
Foreign Languages Education	45	26	19
Health Education	79	26	53
Home Economics Education	21	1	20
Industrial Arts Education	13	10	3
Mathematics Education	73	32	41
Music Education	96	56	40
Nursing Education	18		18
Physical Education	185	105	80
Reading Education	102	17	85
Science Education	72	29	43
Social Science Education	19	7	12
Speech Education	1		1
Technical Education	25	11	14
Trade and Industrial Education	17	14	3
Other Teaching Fields	37	10	27
Education, General	423	165	258
Education, Other	371	163	208
PROFESSIONAL/OTHER FIELDS	2417	1580	837
BUSINESS AND MANAGEMENT	1164	872	292
Accounting	172	115	57
Banking and Finance	172	151	21
Business Admin and Management	204	147	57
Business Economics	19	15	4
Management Information Systems	71	57	14
Marketing Management and Research	134	96	38
Business Statistics	5	5	
Operations Research	58	49	9
Organizational Behavior	72	35	37
Business and Management, General	123	100	23
Business and Management, Other	134	102	32
COMMUNICATIONS	333	176	157
Communications Research	72	44	28
Journalism	7	3	4
Mass Communications	68	42	26
Radio and Television	6	3	3
Communication Theory	25	12	13
Communications, General	70	36	34
Communications, Other	85	36	49
OTHER PROFESSIONAL FIELDS	839	491	348
Architecture & Environmental Design	67	48	19
Home Economics	30	2	28
Law	22	16	6
Library and Archival Science	53	19	34
Public Administration	107	75	32
Social Work	239	77	162
Theology	275	230	45
Professional Fields, General	3	1	2
Professional Fields, Other	43	23	20
OTHER FIELDS	81	41	40

SOURCE: National Research Council, Survey of Earned Doctorates.

APPENDIX TABLE A-2 Number of Doctorate Recipients, by Citizenship, Race/Ethnicity, and Subfield, 1991

			U.S. Citizens and Non-U.S. with Permanent Visas								
Subfield of Doctorate	Total Doctorates*	Non-U.S. Citizens Temp. Visas	Total	Native Amer.	Asian	Black	White	Puerto Rican	Mexican Amer.	Other Hispanic	Other & Unk
TOTAL ALL FIELDS	37451	8852	26535	130	1491	1082	22604	186	226	431	385
PHYSICAL SCIENCES	6276	2211	3771	14	306	53	3229	20	21	58	70
MATHEMATICS	1040	480	494		57	11	410		3	6	7
Applied Mathematics	192	97	94		14	1	78		1		
Algebra	72	24	48		4	2	41				1
Analysis and Functional Analysis	132	71	61		4		55			1	1
Geometry	66	40	26		2	1	22				1
Logic	23	6	17		1		16				
Number Theory	30	8	21		2	2	16			1	
Math Probability and Statistics	206	108	92		17	4	68			1	2
Topology	57	21	36		3		32		1		
Computing Theory and Practice	19	4	15		2		12			1	
Operations Research	16	5	11		1	1	8			1	
Mathematics, General	182	81	43		7		32		1	1	2
Mathematics, Other	45	15	30				30				
COMPUTER SCIENCE	797	338	441	1	65	8	348	3		8	8
Computer Sciences	719	313	392	1	61	5	308	3		8	6
Information Sciences and Systems	78	25	49		4	3	40				2
PHYSICS AND ASTRONOMY	1408	546	806	1	49	9	704	3	3	13	24
Astronomy	50	12	36				35			1	
Astrophysics	75	24	50				48				2
Acoustics	12	3	9		1		7			1	
Atomic and Molecular	76	25	51		3		45			1	2
Electron	1	1									
Elementary Particles	182	63	119		4	1	104	1		5	4
Fluids	14	3	11				11				
Nuclear Structure	66	24	42		2	1	38				1
Optics	84	24	58		3		50	1	2	1	1
Plasma	58	22	36		2		31				3
Polymer	17	10	7		1		6				
Solid State	371	182	189	1	17	4	156	1	1	2	7
Physics, General	247	103	99		10	1	82			2	4
Physics, Other	155	50	99		6	2	91				
CHEMISTRY	2194	659	1420	9	118	22	1210	14	11	19	17
Analytical	303	69	233	5	12	4	202	5	2	1	2
Inorganic	259	75	184		12	2	165	1	1	1	2
Nuclear	14	1	13				13				
Organic	537	155	380	2	35	7	315	5	4	8	4
Pharmaceutical	82	23	57		6		49		1	1	
Physical	363	118	243	1	27	7	199	1	1	4	3
Polymer	111	55	55		3		52				
Theoretical	45	12	33				31	1		1	
Chemistry, General	407	133	169	1	18	2	137	1	2	3	5
Chemistry, Other	73	18	53		5		47				1
EARTH, ATMOS, & MARINE SCI	837	188	610	3	17	3	557		4	12	14
Atmospheric Physics and Chemistry	20	9	11				10			1	
Atmospheric Dynamics	21	12	9				8				1
Meteorology	31	12	18		1		17				
Atmos and Meteorological Sci, Gen	26	5	13		1		10			1	1
Atmos and Meteorological Sci, Other	10	2	8				8				
Geology	191	32	150		2		142		1	1	4
Geochemistry	63	8	54	1			51				2
Geophysics and Seismology	113	36	77		6	1	66		1	2	1
Paleontology	24	3	20				18			1	1
Mineralogy, Petrology	36	4	32				31				1
Stratigraphy, Sedimentation	29	4	25	1	1		23				
Geomorphology and Glacial Geology	18	1	17				17				
Applied Geology	1		1				1				
Geological Sciences, General	34	4	20			1	16		1	2	
Geological Sciences, Other	36	11	25		1		21		1	1	1
Environmental Sciences	35	4	27		3		23			1	
Hydrology and Water Resources	16	4	12				12				
Oceanography	85	19	63	1	1	1	57			2	1
Marine Sciences	27	11	16		1		15				
Physical Sciences, Other	21	7	12				11				1
ENGINEERING	5212	2473	2358	6	401	55	1788	9	14	36	49
Aerospace, Aeronautic & Astronautic	207	80	107		16	1	88				2
Agricultural	84	50	29		1		26	1			1
Bioengineering and Biomedical	149	46	98		10	1	82			2	3
Ceramic	58	26	32		3		28				1
Chemical	620	238	360	1	43	8	290	2	4	5	7
Civil	509	303	174	1	26	9	132	1	2	2	1
Communications	21	12	8		1		7				
Computer	178	97	71		15	2	48			2	4

NOTE: Field groupings may differ from those in reports published by federal sponsors of the Survey of Earned Doctorates. See inside the back cover for a description of fields as reported in this table. Refer also to the explanatory note about this table in front of Appendix A.

*Includes individuals who did not report their citizenship at time of doctorate.

Subfield of Doctorate	Total Doctorates*	Non-U.S. Citizens Temp. Visas	U.S. Citizens and Non-U.S. with Permanent Visas								
			Total	Native Amer.	Asian	Black	White	Puerto Rican	Mex-ican Amer.	Other His-panic	Other & Unk
Electrical, Electronics	1206	554	578	2	124	14	413		3	10	12
Engineering Mechanics	113	63	35		5		28				2
Engineering Physics	23	9	14		2		12				
Engineering Science	42	15	24		5	2	16			1	
Environmental Health Engineering	64	30	29		4	3	21				1
Industrial	163	87	63		16	2	41	2		1	1
Materials Science	362	164	177	1	38	2	127		2	5	2
Mechanical	761	394	303	1	55	3	230	2	3	4	5
Metallurgical	70	42	26		2		23				1
Mining and Mineral	38	24	9		2	1	6				
Naval Architecture, Marine Eng	5	3	2		1		1				
Nuclear	107	37	44		7		34	1		1	1
Ocean	21	14	4		1		2			1	
Operations Research	76	39	37		7	1	27			1	1
Petroleum	28	16	11		1		10				
Polymer	42	19	21		6		14				1
Systems Engineering	48	24	22		1		20				1
Engineering, General	78	23	20		4	1	14				1
Engineering, Other	139	64	60		5	5	48			1	1
LIFE SCIENCES	6928	1686	4965	19	324	116	4300	24	34	68	80
BIOLOGICAL SCIENCES	4642	1027	3455	10	255	57	2988	22	26	45	52
Biochemistry	762	193	549	1	56	7	467	1	1	9	7
Biophysics	99	42	55		8		45				2
Bacteriology	11	1	9		2		7				
Plant Genetics	23	10	13				13				
Plant Pathology	50	22	25		1		22				2
Plant Physiology	65	25	37				33		1	2	1
Botany, Other	105	17	83	1	3	1	76			1	1
Anatomy	77	15	61		2	1	54	1		2	1
Biometrics and Biostatistics	59	23	34		1	1	28			1	3
Cell Biology	150	31	116		6	1	104	1	1	2	1
Ecology	190	23	164		4	1	150	4	1	1	3
Developmental Biology/Embryology	37	2	34				30		1	2	1
Endocrinology	33	8	25		2	1	21		1		
Entomology	138	38	96		2		89	1	1		3
Immunology	177	35	138		7	2	121		1	5	2
Molecular Biology	481	113	362	3	37	5	305	1	2	2	7
Microbiology	373	81	288	1	27	9	239	3	6	1	2
Neurosciences	239	36	199	1	21	1	167		1	3	5
Nutritional Sciences	106	27	74	1	7	2	59	2	1	2	
Parasitology	20	7	13			1	12				
Toxicology	86	11	74		5	2	64		1	1	1
Human and Animal Genetics	160	33	126		12	1	108		1	2	2
Human and Animal Pathology	120	27	87		1	4	79		1		2
Human and Animal Pharmacology	262	64	194		11	5	171	2		1	4
Human and Animal Physiology	272	46	214	1	12	5	190		3	3	
Zoology, Other	126	10	112		2	3	103	1	1	2	
Biological Sciences, General	278	59	178		18	3	151	3	1	2	
Biological Sciences, Other	143	28	95	1	8	1	80	2		1	2
HEALTH SCIENCES	1049	164	822	5	42	40	708	2	3	10	12
Audiology and Speech Pathology	90	12	75		2	6	66				1
Environmental Health	37	7	26		1	1	22			1	1
Public Health	133	26	103	2	6	9	78			4	4
Epidemiology	115	21	92		8	6	75			1	2
Nursing	325	17	296	2	5	8	277		2	1	1
Pharmacy	113	35	70	1	9	3	55			1	1
Rehabilitation/Therapeutic Services	17	2	14		1	1	11	1			
Veterinary Medicine	56	18	33			1	32				
Health Sciences, General	29	7	15		4		11				
Health Sciences, Other	134	19	98		6	5	81	1	1	2	2
AGRICULTURE	1237	495	688	4	27	19	604		5	13	16
Agricultural Business & Mgmt	1	1									
Agricultural Economics	165	71	81		4	2	70			3	2
Animal Breeding and Genetics	18	6	12			1	11				
Animal Nutrition	57	15	41		1	2	38				
Dairy Science	19	7	10				10				
Poultry Science	13	5	7			1	5			1	
Fisheries Science	39	11	28		2	1	23		1		1
Animal Sciences, Other	91	28	58		1		54			2	1
Agronomy	117	53	60	1	1	2	55				1
Plant Breeding and Genetics	69	29	38			1	35			1	1
Plant Pathology	90	43	40		3	1	36				
Plant Protection-Pest Mgmt	2	1	1				1				
Plant Sciences, Other	17	6	11				10				1
Food Engineering	12	10	1							1	
Food Sciences, Other	137	69	61	1	9	1	47		1	1	1
Soil Chemistry/Microbiology	24	8	16		1		15				
Soil Sciences, Other	78	35	42		1	2	36			1	2
Horticulture Science	78	32	45		1	1	39			1	3

APPENDIX TABLE A-2 (Continued)

Subfield of Doctorate	Total Doctorates*	Non-U.S. Citizens Temp. Visas	U.S. Citizens and Non-U.S. with Permanent Visas								
			Total	Native Amer.	Asian	Black	White	Puerto Rican	Mex-ican Amer.	Other His-panic	Other & Unk
Forest Biology	17	6	11		1		9		1		
Forest Engineering	2	1	1				1				
Forest Management	22	7	15		1		11		1		2
Wood Science	16	9	6				6				
Renewable Natural Resources	19	5	14			3	11				
Forestry & Related Sci, Other	45	14	29	1	1		26			1	
Wildlife/Range Management	59	12	47	1			43		1	1	1
Agriculture, General	3	2									
Agriculture, Other	27	9	13			1	12				
SOCIAL SCIENCES (INCL PSYCH)	6127	961	4750	21	154	231	4087	45	53	99	60
Anthropology	340	36	293	1	8	5	264	2	2	5	6
Area Studies	23	8	11		1	1	7				2
Criminology	35	8	26		2	4	18	1			1
Demography	27	13	13		2		11				
Economics	853	401	413	1	34	23	331	4	1	7	12
Econometrics	24	13	11			1	7		1		2
Geography	108	29	73	1		2	66	2			2
International Relations	88	17	63		3	4	52			3	1
Political Science and Government	434	98	313	2	13	16	264	3	5	4	6
Public Policy Studies	111	28	83		5	10	61	2	1	3	1
Sociology	466	101	348	2	17	26	272	6	7	10	8
Statistics	31	21	8		2		6				
Urban Studies	89	27	52		4	7	36	2		2	1
Social Sciences, General	36	6	24			3	20			1	
Social Sciences, Other	222	34	163	1	7	13	134	3	2	1	2
PSYCHOLOGY	3240	121	2856	13	56	116	2538	20	34	63	16
Clinical	1302	21	1167	4	16	45	1045	7	15	29	6
Cognitive	94	12	82		1	2	75			2	2
Comparative	7		7				6		1		
Counseling	495	5	475	4	8	19	421	5	6	10	2
Developmental	156	5	149	2	6	9	124	2		5	1
Experimental	142	14	125		6	3	108	2		5	1
Educational	110	11	94		3	3	81	1	1	3	2
Industrial and Organizational	142	5	133		2	3	123	1	2	2	
Personality	13		13				13				
Physiological	45	6	39			3	36				
Psychometrics	9	3	6				6				
Quantitative	7	2	5				5				
School	82	2	74			3	70			1	
Social	147	8	139		4	9	123	1	2		
Psychology, General	321	19	206	1	5	13	175	1	6	4	1
Psychology, Other	168	8	142	2	5	4	127		1	2	1
HUMANITIES	4094	510	3390	10	84	101	2992	32	29	83	59
History, American	250	14	236		3	17	212	1			3
History, European	126	5	119			2	114			1	2
History of Science	27	7	19				17				2
History, General	123	17	73		2	4	60		1	2	4
History, Other	132	26	105		3	3	88		1	4	6
Classics	55	2	52				49		1	1	1
Comparative Literature	150	29	115		4	1	103	1		5	1
Linguistics	227	78	134		8	5	111	2	1	5	2
Speech, Debate, and Rhetoric	85	5	80		1	2	73			3	1
Letters, General	17	1	16		2	1	13				
Letters, Other	44	5	39	1		2	34			2	
American Studies	92	9	81		2	6	69		2	1	1
Archeology	33	2	31				29				2
Art History and Criticism	125	14	107		4	1	97	1		3	1
Music	584	53	486	4	16	10	441	2	4	4	5
Philosophy	285	36	238		2	4	222	2	2	1	5
Religion	183	13	163	1	6	6	142	1	1	1	5
Theatre	90	15	73	1	4	2	65				1
LANGUAGE AND LITERATURE	1351	165	1135	3	25	34	976	18	16	50	13
American	253	16	237		6	9	216	1	3		2
English	600	62	507	2	7	17	467		2	7	5
French	99	12	83		3	3	74	1		1	1
German	71	12	58	1			57				
Italian	31	6	25				25				
Spanish	172	41	121			3	53	16	10	38	1
Russian	25		25		1		24				
Slavic	14	1	11				9			1	1
Chinese	19	4	15		6		8				1
Japanese	7	1	6				6				
Hebrew	11		10				9		1		
Arabic	4	1	3			1	2				
Other Languages	45	9	34		2	1	26			3	2
Humanities, General	29	1	22				21				1
Humanities, Other	86	13	66		2	1	56	4			3

NOTE: Field groupings may differ from those in reports published by federal sponsors of the Survey of Earned Doctorates. See inside the back cover for a description of fields as reported in this table. Refer also to the explanatory note about this table in front of Appendix A.

*Includes individuals who did not report their citizenship at time of doctorate.

			U.S. Citizens and Non-U.S. with Permanent Visas								
Subfield of Doctorate	Total Doctorates*	Non-U.S. Citizens Temp. Visas	Total	Native Amer.	Asian	Black	White	Puerto Rican	Mex-ican Amer.	Other His-panic	Other & Unk
EDUCATION	6397	483	5593	53	124	438	4748	50	66	68	46
Curriculum and Instruction	803	62	721	7	15	43	616	13	10	12	5
Educational Admin and Supervision	1409	46	1322	11	15	126	1133	2	16	7	12
Educational Leadership	473	18	423	3	3	43	360	4	3	4	3
Educational Media	73	13	60	1	4	3	52				
Educational Statistics and Research	79	10	66	2	5	2	56			1	
Educational Testing, Eval and Meas	31	7	22			1	21				
Educational Psychology	321	24	292	2	10	10	257	3	5	3	2
School Psychology	90	3	85	1	1		75	2	2	3	1
Social Foundations	108	12	92	1	9	4	74		2	1	1
Special Education	226	21	200	1	6	8	181		4		
Student Counseling & Personnel Serv	269	2	251	2	4	24	210	4	1	3	3
Higher Education Research	344	27	307	8	9	26	252	1	3	4	4
Pre-elementary Education	86	4	58			9	47		1	1	
Elementary Education	73	5	67	1		4	61	1			
Secondary Education	40	3	34			2	29		2	1	
Adult and Continuing Education	208	14	191	1	4	20	162	1		2	1
TEACHING FIELDS	970	135	810	3	17	49	706	7	6	16	6
Agricultural Education	49	13	33	1	1	1	29			1	
Art Education	28	7	21	1	1		19				
Business Education	32	1	29		1	3	25				
English Education	58	3	53			2	49			2	
Foreign Languages Education	45	20	25		2		19	1		2	1
Health Education	79	2	74		1	1	72				
Home Economics Education	21	4	17	1		4	12				
Industrial Arts Education	13	4	9				9				
Mathematics Education	73	15	58		1	5	47		1	4	
Music Education	96	5	90		2	8	78	2			
Nursing Education	18	1	17			2	15				
Physical Education	185	26	150		2	3	135	3	1	2	4
Reading Education	102	6	92		1	5	81		1	3	1
Science Education	72	10	62			3	57	1		1	
Social Science Education	19	4	14		4	2	8				
Speech Education	1		1			1					
Technical Education	25	4	21			2	18		1		
Trade and Industrial Education	17	7	10		1	2	7				
Other Teaching Fields	37	3	34			5	26		2	1	
Education, General	423	41	283	7	10	30	214	7	4	5	6
Education, Other	371	36	309	2	12	34	242	5	7	5	2
PROFESSIONAL/OTHER FIELDS	2417	528	1708	7	98	88	1460	6	9	19	21
BUSINESS AND MANAGEMENT	1164	329	747	2	60	22	644	1	2	7	9
Accounting	172	34	132		7	3	121				1
Banking and Finance	172	76	94		12	5	77				
Business Admin and Management	204	40	126		5	4	112		2		3
Business Economics	19	6	13		3		10				
Management Information Systems	71	25	46	1	6	1	37			1	
Marketing Management and Research	134	36	94		10	3	78	1		1	1
Business Statistics	5	2	3				3				
Operations Research	58	25	32		3		24			2	3
Organizational Behavior	72	8	64		1	3	59			1	
Business and Management, General	123	33	57	1	4	2	49				1
Business and Management, Other	134	44	86		9	1	74			2	
COMMUNICATIONS	333	61	256	1	9	18	221		1	3	3
Communications Research	72	12	58		1	4	52			1	
Journalism	7	2	5				5				
Mass Communications	68	18	49		4	2	41			1	1
Radio and Television	6	1	5				5				
Communication Theory	25	1	23	1	1	2	19				
Communications, General	70	14	52			3	48			1	
Communications, Other	85	13	64		3	7	51		1		2
OTHER PROFESSIONAL FIELDS	839	124	652	3	26	44	554	4	5	8	8
Architecture, Environmental Design	67	30	30		5	1	23				1
Home Economics	30	5	24			2	22				
Law	22	9	9		1		5			1	2
Library and Archival Science	53	8	43		3	5	33			1	1
Public Administration	107	19	73	1	4	5	61			1	1
Social Work	239	17	209	2	6	20	171	4	2	2	2
Theology	275	24	233		6	7	216		1	2	1
Professional Fields, General	3		1				1				
Professional Fields, Other	43	12	30		1	4	22		2	1	
OTHER FIELDS	81	14	53	1	3	4	41	1	1	1	1

SOURCE: National Research Council, Survey of Earned Doctorates.

APPENDIX TABLE A-3 Statistical Profile of Doctorate Recipients, by Major Field, 1991

Total All Doctorates

		1991 Total	Physics and Astronomy	Chemistry	Earth, Atmos. and Marine Sci.	Mathematics	Computer Sciences	PHYSICAL SCIENCES	ENGINEERING	Biochemistry	Other Biosciences	Biosciences Subtotal	Health Sciences	Agricultural Sciences	LIFE SCIENCES
Number in Field		37451	1408	2194	837	1040	797	6276	5212	762	3880	4642	1049	1237	6928
Male	%	63.2	89.2	76.9	77.9	81.3	85.4	81.6	91.3	62.6	62.0	62.1	36.1	80.2	61.4
Female		36.8	10.8	23.1	22.1	18.7	14.6	18.4	8.7	37.4	38.0	37.9	63.9	19.8	38.6
U.S. Citizenship	%	66.0	52.3	59.8	69.8	42.2	47.6	55.0	37.9	67.1	70.5	70.0	72.9	49.8	66.8
Non-U.S., Permanent Visa		4.8	4.9	5.0	3.1	5.3	7.8	5.1	7.3	5.0	4.4	4.5	5.4	5.8	4.8
Non-U.S., Temporary Visa		23.6	38.8	30.0	22.5	46.2	42.4	35.2	47.4	25.3	21.5	22.1	15.6	40.0	24.3
Unknown		5.5	4.0	5.2	4.7	6.3	2.3	4.7	7.3	2.6	3.6	3.4	6.0	4.4	4.0
Married	%	57.5	48.7	52.9	55.9	53.2	57.3	53.0	60.2	53.9	54.0	54.0	60.9	65.6	57.1
Not Married		33.8	44.0	39.1	36.4	37.8	38.3	39.5	29.7	41.1	39.4	39.7	29.2	26.4	35.7
Unknown		8.7	7.2	8.1	7.6	9.0	4.4	7.5	10.1	5.0	6.5	6.3	9.9	7.9	7.1
Median Age at Doct.	Yrs	33.9	30.0	29.4	32.6	30.9	31.7	30.5	31.4	29.9	31.6	31.3	37.6	33.8	32.4
Percent with Bacc. in Same Field as Doctorate	%	56.4	77.8	79.5	59.0	73.0	30.2	69.1	79.0	26.4	57.8	52.6	50.7	62.6	54.1
Percent with Masters	%	78.2	64.2	38.4	77.9	75.9	85.4	61.6	85.7	29.4	49.8	46.5	84.8	91.7	60.3
Median Time Lapse From Bacc. to Doct.															
Total Time	Yrs	10.4	7.6	6.8	9.3	8.0	8.8	7.8	8.5	7.5	8.5	8.3	13.9	10.2	9.1
Registered Time		7.0	6.4	5.6	7.2	6.5	6.6	6.3	6.1	6.2	6.7	6.6	7.2	6.5	6.7
Postdoctoral Study Plans	%	25.4	64.3	51.4	42.4	27.3	15.6	44.6	21.5	80.6	69.9	71.7	16.4	30.8	56.0
Fellowship		12.6	23.9	24.0	18.6	14.2	5.8	19.3	6.5	51.4	40.5	42.3	9.0	9.7	31.4
Research Assoc.		10.2	39.0	26.2	22.3	9.9	8.3	23.6	13.0	22.8	21.4	21.7	5.3	18.6	18.6
Traineeship		1.1	0.6	0.5	0.2	1.6	1.1	0.8	1.4	1.2	2.1	1.9	0.8	1.8	1.7
Other Study		1.5	0.7	0.7	1.2	1.5	0.4	0.9	0.6	5.1	5.9	5.8	1.3	0.7	4.2
Planned Employment After Doctorate	%	66.5	29.5	41.0	50.7	62.9	79.2	48.2	68.1	14.8	24.4	22.8	74.9	62.5	37.8
Educ. Institution*		39.7	9.5	7.1	16.1	47.5	39.3	19.6	21.4	3.8	12.1	10.7	43.3	26.8	18.5
Industry/Business		13.6	12.6	29.3	17.4	9.6	31.2	21.0	34.9	8.0	5.7	6.1	10.6	14.5	8.3
Government		5.8	4.1	2.5	12.5	2.8	3.4	4.4	7.2	1.6	3.7	3.4	9.6	14.1	6.2
Nonprofit		3.9	1.3	0.5	1.2	0.8	2.0	1.0	1.2	0.5	1.1	1.0	7.1	1.6	2.0
Other & Unknown		3.6	1.9	1.5	3.3	2.2	3.3	2.2	3.3	0.9	1.8	1.6	4.3	5.6	2.7
Postdoc. Plans Unknown	%	8.1	6.2	7.6	6.9	9.8	5.3	7.3	10.5	4.6	5.7	5.5	8.7	6.7	6.2
Definite Postdoc. Study	%	17.6	45.2	37.7	28.4	16.4	9.7	31.1	11.5	64.2	54.9	56.4	11.2	18.1	42.8
Seeking Postdoc. Study		7.9	19.0	13.7	14.0	10.9	5.9	13.5	10.0	16.4	15.0	15.2	5.1	12.7	13.3
Definite Employment		46.4	19.4	29.8	36.2	40.9	52.8	33.1	43.0	8.8	16.0	14.8	54.8	41.8	25.7
Seeking Employment		20.1	10.2	11.2	14.5	22.0	26.3	15.1	25.0	6.0	8.3	7.9	20.1	20.7	12.1
Employment Commitments After Doctorate		17368	273	653	303	425	421	2075	2243	67	622	689	575	517	1781
Primary Activity†															
R & D	%	28.5	64.8	71.8	53.8	34.4	57.5	57.7	64.4	56.7	46.5	47.5	32.0	52.2	43.9
Teaching		32.4	19.0	12.1	16.5	48.2	24.5	23.6	16.0	11.9	23.3	22.2	32.9	15.5	23.7
Administration		10.9	0.4	1.2	4.0	0.5	2.1	1.5	1.5	3.0	6.3	6.0	11.7	4.4	7.4
Prof. Services		12.1	2.2	4.3	10.6	2.8	4.3	4.6	6.2	7.5	12.1	11.6	11.5	8.9	10.8
Other		2.3	2.9	1.8	4.3	0.5	1.9	2.1	2.3	6.0	1.3	1.7	1.4	4.3	2.4
Secondary Activity															
R & D	%	25.9	15.8	11.6	23.1	41.6	22.8	22.3	17.7	14.9	25.4	24.4	34.3	18.4	25.8
Teaching		14.3	6.6	4.1	16.8	19.5	20.9	12.9	13.2	6.0	16.1	15.1	19.1	17.0	17.0
Administration		9.3	14.3	22.1	10.9	3.8	6.4	12.5	11.1	16.4	13.7	13.9	10.8	11.0	12.1
Prof. Services		7.9	7.3	9.8	8.9	5.2	5.7	7.6	9.1	9.0	8.8	8.9	5.7	8.7	7.8
Other		3.0	4.0	5.4	3.0	1.6	1.7	3.3	3.0	4.5	2.3	2.5	2.1	2.7	2.4
No Secondary Activity		25.7	41.4	38.3	26.4	14.6	32.8	31.0	36.2	34.3	23.2	24.2	17.4	27.5	23.0
Activity(ies) Unknown	%	13.9	10.6	8.7	10.9	13.6	9.7	10.5	9.6	14.9	10.6	11.0	10.6	14.7	12.0
Region of Employment After Doctorate‡															
New England	%	5.5	5.1	5.1	2.6	5.6	5.0	4.8	5.4	9.0	4.7	5.1	4.9	2.5	4.3
Middle Atlantic		13.0	11.7	18.1	4.6	12.2	17.6	14.0	12.8	9.0	10.6	10.4	10.4	5.8	9.1
East No. Central		13.7	7.7	18.7	7.6	15.5	11.2	13.4	13.1	17.9	9.6	10.4	15.7	9.7	11.9
West No. Central		6.8	4.4	5.2	3.0	8.5	3.3	5.1	4.2	4.5	5.0	4.9	5.6	12.2	7.2
South Atlantic		14.8	15.4	13.3	14.2	15.3	11.2	13.7	10.1	9.0	19.6	18.6	18.4	7.7	15.4
East So. Central		4.8	4.0	4.3	2.6	6.1	3.6	4.2	4.4	0.0	6.1	5.5	5.9	2.7	4.8
West So. Central		8.4	7.0	10.7	19.8	9.2	6.9	10.5	8.2	3.0	3.7	3.6	8.5	5.0	5.6
Mountain		4.9	4.0	3.5	11.9	3.5	5.0	5.1	4.5	4.5	4.3	4.4	3.3	6.4	4.6
Pacific & Insular		11.2	22.3	7.4	12.5	8.7	18.5	12.6	14.6	20.9	15.0	15.5	10.4	7.2	11.5
U.S., Region Unknown		4.1	3.7	5.7	2.3	2.6	3.6	3.9	2.4	3.0	4.2	4.1	5.0	1.5	3.6
Foreign		11.5	12.1	6.9	17.8	11.3	13.5	11.4	18.9	17.9	16.4	16.5	10.8	37.3	20.7
Region Unknown		1.2	2.6	1.2	1.0	1.4	0.7	1.3	1.4	1.5	0.8	0.9	1.0	1.9	1.2

NOTE: Field groupings may differ from those in reports published by federal sponsors of the Survey of Earned Doctorates. See inside the back cover for a description of fields as reported in this table. Physical Sciences includes Mathematics and Computer Sciences, as well as Physics/Astronomy, Chemistry, and Earth/Atmospheric/Marine Sciences. Refer also to the explanatory note about this table in front of Appendix A.

*Includes 2-year, 4-year, and foreign colleges and universities, medical schools, and elementary/secondary schools.

†Includes only recipients with definite employment plans. Revisions to the survey form in 1990 appear to have resulted in a higher rate of nonresponse to the item on work activity than in previous years. The nonresponse rate in 1991 was 13.9% compared to 6.2% in 1989 and was especially high among recipients planning to work in educational institutions, thereby affecting the percentages in teaching and administration.

‡Includes only recipients with definite employment plans.

Psychology	Economics	Anthropology and Sociology	Political Sci./ Internat'l Rel.	Other Social Sciences	SOCIAL SCI. INCL. PSYCH.	TOTAL SCIENCES	History	Eng. and Amer. Lang. and Lit.	Foreign Lang. and Lit.	Other Humanities	HUMANITIES	EDUCATION	Business and Management	Other Professional Fields	Other Fields §	PROFESSIONAL/ OTHER FIELDS	TOTAL NONSCIENCES
3240	**877**	**806**	**522**	**682**	**6127**	**24543**	**658**	**853**	**498**	**2085**	**4094**	**6397**	**1164**	**1172**	**81**	**2417**	**12908**
38.8	79.7	45.4	72.8	58.7	50.6	70.2	62.5	43.4	40.0	58.0	53.5	41.9	74.9	56.9	50.6	65.4	50.0
61.2	20.3	54.6	27.2	41.3	49.4	29.8	37.5	56.6	60.0	42.0	46.5	58.1	25.1	43.1	49.4	34.6	50.0
86.3	41.8	72.8	65.5	59.7	73.4	59.3	80.7	82.8	61.6	77.1	77.0	84.8	57.5	74.4		65.8	78.8
1.9	6.5	6.7	6.5	6.7	4.1	5.3	3.2	4.5	16.9	4.6	5.8	2.6	6.7	3.1		4.8	4.1
3.7	47.2	17.0	22.0	25.5	15.7	29.9	10.5	9.1	17.5	13.2	12.5	7.6	28.3	15.8		21.8	11.8
8.1	4.4	3.5	5.9	8.1	6.8	5.6	5.6	3.6	4.0	5.1	4.7	5.0	7.6	6.7		7.5	5.4
50.2	56.6	53.6	60.2	57.3	53.2	55.7	54.7	53.6	51.2	54.6	54.0	65.0	64.4	60.8		62.1	60.9
38.5	35.7	37.7	31.2	31.7	36.6	35.6	36.5	38.5	40.4	37.3	37.8	26.4	25.4	28.7		27.1	30.1
11.2	7.8	8.7	8.6	11.0	10.2	8.6	8.8	8.0	8.4	8.1	8.2	8.6	10.1	10.6		10.8	8.9
33.9	32.1	36.5	34.4	35.8	34.1	32.0	35.7	36.1	35.7	35.8	35.8	42.1	35.4	38.3		36.9	39.2
61.2	63.4	47.5	51.9	18.9	54.2	63.3	60.8	68.3	50.6	54.0	57.7	39.3	35.1	26.5		29.9	43.4
78.1	75.4	90.4	85.6	88.1	81.1	71.2	87.7	88.0	90.4	87.1	87.8	94.9	83.2	93.4		88.1	91.4
10.1	9.1	12.4	11.1	12.6	10.5	8.8	12.0	12.3	12.1	12.4	12.3	18.4	12.0	15.0		13.5	15.5
7.3	6.6	9.1	7.9	7.6	7.5	6.6	8.8	8.2	8.3	8.4	8.4	8.1	7.0	8.0		7.5	8.0
20.5	6.8	18.4	11.3	11.9	16.5	35.9	10.8	5.2	9.8	7.1	7.6	5.0	2.4	4.0		3.5	5.5
14.2	2.9	11.3	8.2	6.0	10.8	17.9	8.4	2.8	5.2	4.0	4.6	1.7	1.2	1.7		1.6	2.6
3.1	2.7	5.5	1.7	3.7	3.3	14.9	0.2	0.9	2.4	1.2	1.1	1.5	0.6	1.2		1.1	1.3
2.1	1.0	0.6	0.4	1.0	1.5	1.4	0.8	0.4	1.0	0.6	0.6	0.7	0.4	0.4		0.4	0.6
1.0	0.2	1.0	1.0	1.2	0.9	1.8	1.5	1.1	1.2	1.4	1.3	1.1	0.2	0.7		0.4	1.0
69.8	85.7	74.1	79.1	77.4	74.3	56.0	80.2	87.3	81.7	84.8	84.2	87.7	87.1	87.5		86.7	86.4
26.1	54.8	53.3	61.3	50.0	39.4	24.6	64.3	78.2	72.3	67.6	69.8	68.2	75.7	57.6		65.7	68.3
16.5	7.4	4.6	4.2	6.7	11.5	18.0	3.3	3.0	4.2	5.2	4.3	5.0	7.7	6.9		7.4	5.2
9.0	14.1	5.3	5.9	8.8	8.9	6.6	5.2	1.1	0.6	1.5	1.9	5.7	1.9	4.6		3.4	4.1
12.4	2.6	5.2	2.9	5.9	8.5	3.2	3.8	1.1	1.2	6.2	4.1	4.6	0.7	14.4		7.7	5.0
6.0	6.7	5.6	4.8	6.0	5.9	3.5	3.6	4.0	3.4	4.4	4.1	4.1	1.1	4.0		2.6	3.8
9.7	7.4	7.6	9.6	10.7	9.2	8.1	9.0	7.5	8.4	8.1	8.1	7.4	10.5	8.4		9.8	8.1
14.9	3.9	9.9	6.3	5.9	11.0	25.2	6.4	2.8	5.4	4.0	4.3	2.6	1.4	2.3		2.0	3.1
5.6	3.0	8.4	5.0	6.0	5.6	10.7	4.4	2.3	4.4	3.1	3.3	2.3	1.0	1.7		1.4	2.5
49.9	63.5	46.2	54.0	53.1	52.1	37.8	52.1	57.9	53.6	54.5	54.7	65.5	72.3	65.5		68.1	62.6
19.9	22.2	27.9	25.1	24.3	22.2	18.1	28.1	29.4	28.1	30.3	29.5	22.1	14.9	22.0		18.7	23.8
1617	**557**	**372**	**282**	**362**	**3190**	**9289**	**343**	**494**	**267**	**1137**	**2241**	**4193**	**841**	**768**		**1645**	**8079**
13.5	43.3	26.3	20.2	29.8	22.7	44.6	14.0	4.7	8.6	8.3	8.4	6.1	32.3	10.9		21.9	10.0
13.5	28.9	46.5	47.2	37.0	25.7	22.5	55.7	68.6	71.2	60.9	63.0	32.7	48.3	43.6		45.6	43.7
4.7	3.2	4.6	5.3	5.8	4.6	3.7	6.1	3.6	0.7	4.2	4.0	31.9	2.6	11.5		7.2	19.1
56.2	2.9	5.1	3.9	11.0	31.2	15.3	2.6	1.8	1.9	6.9	4.5	10.4	2.1	14.5		8.3	8.3
2.1	3.6	2.4	1.1	2.5	2.4	2.3	4.7	2.2	0.4	4.2	3.4	1.5	1.3	4.2		2.7	2.2
22.3	28.2	35.5	37.2	31.8	27.3	23.6	39.4	46.6	51.7	36.7	41.1	18.7	43.6	30.2		36.9	28.6
15.6	25.1	16.1	17.4	15.2	17.5	15.3	10.8	6.5	5.6	11.3	9.5	11.9	28.5	12.2		20.7	13.0
10.6	5.9	9.1	4.6	8.8	8.9	10.8	5.2	5.5	3.7	8.2	6.6	8.4	3.3	9.8		6.4	7.5
7.3	3.4	3.8	1.8	8.6	5.9	7.4	3.2	2.6	2.2	6.0	4.4	11.8	2.9	9.6		6.1	8.6
5.9	2.5	1.9	3.2	3.3	4.3	3.4	2.3	1.4	1.1	4.7	3.2	2.6	0.7	2.6		1.7	2.5
28.2	16.7	18.5	13.5	18.5	22.7	27.9	22.2	18.4	18.4	17.6	18.6	29.3	7.6	20.2		13.9	23.2
10.0	18.1	15.1	22.3	13.8	13.5	11.6	16.9	19.0	17.2	15.6	16.7	17.5	13.3	15.4		14.3	16.6
6.1	5.9	6.5	6.0	6.1	6.1	5.3	7.9	6.1	8.6	6.1	6.6	5.6	4.9	5.1		5.0	5.7
16.9	13.1	14.8	12.8	11.9	15.0	13.1	15.7	15.0	16.1	14.0	14.7	11.6	12.8	14.7		13.6	12.9
13.4	11.0	14.2	17.7	15.7	13.7	13.2	12.8	16.8	13.9	14.0	14.4	14.2	16.2	13.8		14.8	14.4
7.4	4.1	4.8	3.2	4.1	5.8	5.5	5.8	4.7	8.2	8.2	7.1	9.3	7.4	7.8		7.7	8.3
14.3	21.5	13.7	16.7	14.6	15.7	13.9	17.8	14.6	9.7	15.0	14.7	16.5	16.5	14.2		15.7	15.8
3.8	1.6	3.8	3.5	2.5	3.2	4.0	5.8	6.5	4.1	4.5	5.1	6.1	6.8	5.5		6.0	5.8
9.6	5.0	5.6	7.4	6.1	7.8	8.1	5.8	8.9	5.6	7.4	7.3	9.1	9.8	11.3		10.5	8.9
5.4	2.5	5.9	5.3	5.0	4.9	4.8	3.5	3.8	5.6	4.0	4.1	5.6	4.4	4.7		4.5	5.0
13.0	5.9	12.6	13.5	11.9	11.6	12.5	12.0	10.7	12.0	10.0	10.7	9.9	8.3	6.4		7.4	9.6
6.5	1.8	5.1	3.2	5.0	5.0	3.9	5.0	3.2	4.5	3.5	3.8	5.3	2.7	3.9		3.3	4.5
2.7	26.4	11.8	10.3	16.3	10.1	14.6	7.6	8.5	9.4	12.3	10.4	5.8	9.2	11.7		10.6	8.1
1.0	1.1	1.1	0.4	0.8	0.9	1.2	0.3	1.2	2.2	1.1	1.1	1.2	1.1	0.9		1.0	1.2

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§Statistics are not presented for this group because too few records contained the specific data.

APPENDIX TABLE A-3 (Continued)

Doctorates: Men

		1991 Total	Physics and Astronomy	Chemistry	Earth, Atmos. and Marine Sci.	Mathematics	Computer Sciences	PHYSICAL SCIENCES	ENGINEERING	Biochemistry	Other Biosciences	Biosciences Subtotal	Health Sciences	Agricultural Sciences	LIFE SCIENCES
Total Male		23686	1256	1687	652	846	681	5122	4760	477	2406	2883	379	992	4254
Male as a Percent of Total Doctorates	%	63.2	89.2	76.9	77.9	81.3	85.4	81.6	91.3	62.6	62.0	62.1	36.1	80.2	61.4
U.S. Citizenship	%	58.6	53.0	58.2	67.6	41.5	43.8	53.5	35.9	68.1	69.1	68.9	57.5	47.7	63.0
Non-U.S., Permanent Visa		5.0	4.7	4.6	2.6	4.3	7.5	4.7	7.2	3.4	3.8	3.7	7.4	5.9	4.6
Non-U.S., Temporary Visa		30.2	38.0	31.3	25.5	47.2	46.3	36.8	49.1	25.4	23.0	23.4	25.3	41.7	27.9
Unknown		6.1	4.3	5.9	4.3	7.1	2.5	5.1	7.8	3.1	4.1	3.9	9.8	4.6	4.6
Married	%	60.3	49.3	53.8	58.0	53.5	57.7	53.7	60.7	52.8	56.7	56.1	67.3	68.1	59.9
Not Married		30.7	43.6	37.8	34.5	36.5	37.6	38.5	28.9	42.1	36.4	37.4	19.5	23.8	32.6
Unknown		9.0	7.2	8.4	7.5	9.9	4.7	7.8	10.4	5.0	6.9	6.6	13.2	8.1	7.5
Median Age at Doct.	Yrs	33.1	30.0	29.6	32.9	30.9	31.6	30.5	31.5	30.0	31.7	31.4	35.5	34.0	32.3
Percent with Bacc. in Same Field as Doctorate	%	58.9	78.1	79.3	60.3	71.4	29.5	68.7	79.9	27.7	55.9	51.2	28.2	66.4	52.7
Percent with Masters	%	76.5	63.9	39.2	79.6	74.3	84.9	62.3	86.0	29.6	49.8	46.5	74.7	92.0	59.6
Median Time Lapse From Bacc. to Doct.															
Total Time	Yrs	9.6	7.5	6.9	9.3	8.0	8.7	7.8	8.5	7.5	8.4	8.2	11.7	10.3	8.8
Registered Time		6.8	6.4	5.7	7.2	6.5	6.6	6.3	6.1	6.2	6.7	6.6	7.2	6.5	6.6
Postdoctoral Study Plans	%	27.7	64.5	51.8	44.0	28.7	15.6	45.3	21.2	78.8	69.7	71.2	20.1	29.8	57.0
Fellowship		12.9	23.8	24.5	18.7	15.1	5.7	19.6	6.2	47.8	39.0	40.4	11.6	10.0	30.8
Research Assoc.		12.1	39.3	26.0	23.8	10.4	8.4	24.0	13.0	23.5	21.6	21.9	6.1	17.6	19.5
Traineeship		1.1	0.6	0.6	0.2	1.8	1.2	0.8	1.4	1.7	2.1	2.0	0.8	1.6	1.8
Other		1.6	0.8	0.7	1.4	1.4	0.3	0.9	0.6	5.9	7.0	6.8	1.6	0.6	4.9
Planned Employment After Doctorate	%	63.6	29.4	40.2	49.2	60.4	78.9	47.2	67.9	16.1	24.1	22.8	67.3	63.1	36.2
Educ. Institution*		35.1	9.2	6.4	15.8	45.3	37.7	18.9	21.2	4.4	11.8	10.6	27.7	26.8	15.9
Industry/Business		15.9	12.6	29.7	17.2	9.2	31.4	20.8	35.0	8.6	5.7	6.2	16.1	14.4	9.0
Government		6.3	4.2	2.3	12.1	3.1	4.0	4.4	7.3	1.5	4.2	3.7	13.7	15.0	7.2
Nonprofit		3.3	1.4	0.4	1.2	0.9	2.3	1.1	1.2	0.8	1.1	1.1	5.0	1.3	1.5
Other & Unknown		3.1	1.9	1.4	2.9	1.9	3.4	2.0	3.2	0.8	1.3	1.2	4.7	5.5	2.5
Postdoc. Plans Unknown	%	8.7	6.1	8.0	6.7	10.9	5.6	7.5	10.9	5.0	6.2	6.0	12.7	7.1	6.8
Definite Postdoc. Study	%	19.0	45.5	38.2	29.4	17.4	9.4	31.6	11.2	64.8	55.4	57.0	15.0	17.2	44.0
Seeking Postdoc. Study		8.6	18.9	13.6	14.6	11.3	6.2	13.7	10.0	14.0	14.2	14.2	5.0	12.6	13.0
Definite Employment		44.1	18.9	29.5	36.0	39.1	51.5	32.3	43.0	9.6	16.5	15.4	45.1	42.4	24.4
Seeking Employment		19.5	10.4	10.7	13.2	21.3	27.3	14.9	24.9	6.5	7.6	7.4	22.2	20.7	11.8
Employment Commitments After Doctorate		10446	238	498	235	331	351	1653	2045	46	398	444	171	421	1036
Primary Activity†															
R & D	%	35.6	66.4	73.7	54.5	36.3	60.4	59.6	64.9	58.7	48.7	49.8	45.6	52.3	50.1
Teaching		28.3	17.6	10.4	16.2	45.0	22.2	21.7	15.7	13.0	20.6	19.8	11.7	15.0	16.5
Administration		9.0	0.4	1.2	3.8	0.6	2.0	1.5	1.5	2.2	6.3	5.9	8.2	3.6	5.3
Prof. Services		9.9	2.1	3.8	9.8	3.3	4.6	4.5	6.1	6.5	12.6	11.9	18.7	9.5	12.1
Other		2.6	3.4	1.6	5.1	0.6	2.0	2.2	2.2	6.5	1.0	1.6	2.3	4.5	2.9
Secondary Activity															
R & D	%	23.5	14.3	10.4	23.4	38.7	20.2	20.6	17.4	15.2	24.1	23.2	18.7	19.2	20.8
Teaching		15.0	6.3	4.6	15.7	20.8	21.9	13.4	13.3	4.3	16.8	15.5	22.2	17.8	17.6
Administration		10.1	16.0	24.9	12.8	4.5	6.3	13.9	11.1	19.6	14.3	14.9	13.5	10.7	12.9
Prof. Services		7.4	8.0	9.6	10.6	4.2	6.0	7.7	9.1	10.9	8.3	8.6	4.1	7.8	7.5
Other		2.8	4.2	5.4	3.0	2.1	2.0	3.5	3.1	6.5	2.5	2.9	2.3	2.1	2.5
No Secondary Activity		26.7	41.2	35.7	23.8	15.4	34.8	30.6	36.5	30.4	23.1	23.9	25.7	27.1	25.5
Activity(ies) Unknown	%	14.6	10.1	9.2	10.6	14.2	8.8	10.5	9.6	13.0	10.8	11.0	13.5	15.2	13.1
Region of Employment After Doctorate‡															
New England	%	5.3	5.0	4.8	2.6	4.5	5.1	4.5	5.5	10.9	5.8	6.3	5.3	1.9	4.3
Middle Atlantic		12.8	11.8	19.5	4.7	12.1	17.7	14.4	12.4	6.5	11.8	11.3	11.7	4.8	8.7
East No. Central		13.5	7.6	18.9	7.2	16.0	11.1	13.4	13.2	17.4	9.5	10.4	10.5	10.0	10.2
West No. Central		6.3	3.8	4.8	3.0	6.9	3.7	4.6	4.3	4.3	4.3	4.3	7.0	11.9	7.8
South Atlantic		13.7	14.7	13.5	14.5	16.0	11.4	13.9	9.8	10.9	18.6	17.8	22.2	6.9	14.1
East So. Central		4.4	4.2	4.4	3.0	6.0	2.3	4.1	4.2	0.0	5.8	5.2	2.3	2.6	3.7
West So. Central		8.3	6.7	8.8	21.7	10.3	6.8	10.2	8.3	4.3	3.5	3.6	6.4	5.0	4.6
Mountain		4.8	4.6	3.2	11.5	3.9	5.4	5.2	4.5	2.2	3.5	3.4	2.3	6.2	4.3
Pacific & Insular		10.9	24.4	7.2	8.9	8.5	17.4	12.3	14.1	17.4	14.1	14.4	7.6	7.1	10.3
U.S., Region Unknown		3.5	2.5	5.8	2.1	2.1	3.4	3.6	2.2	2.2	4.0	3.8	4.1	1.7	3.0
Foreign		15.2	11.8	7.8	19.6	12.1	14.8	12.4	20.0	23.9	18.1	18.7	19.3	40.1	27.5
Region Unknown		1.3	2.9	1.2	1.3	1.5	0.9	1.5	1.5	0.0	1.0	0.9	1.2	1.9	1.4

NOTE: Field groupings may differ from those in reports published by federal sponsors of the Survey of Earned Doctorates. See inside the back cover for a description of fields as reported in this table. Physical Sciences includes Mathematics and Computer Sciences, as well as Physics/Astronomy, Chemistry, and Earth/Atmospheric/Marine Sciences. Refer also to the explanatory note about this table in front of Appendix A.

*Includes 2-year, 4-year, and foreign colleges and universities, medical schools, and elementary/secondary schools.

†Includes only recipients with definite employment plans. Revisions to the survey form in 1990 appear to have resulted in a higher rate of nonresponse to the item on work activity than in previous years. Among men, the nonresponse rate in 1991 was 14.6% compared to 6.8% in 1989 and was especially high among recipients planning to work in educational institutions, thereby affecting the percentages in teaching and administration.

‡Includes only recipients with definite employment plans.

Psychology	Economics	Anthropology and Sociology	Political Sci./ Internat'l Rel.	Other Social Sciences	SOCIAL SCI. INCL. PSYCH.	TOTAL SCIENCES	History	Eng. and Amer. Lang. and Lit.	Foreign Lang. and Lit.	Other Humanities	HUMANITIES	EDUCATION	Business and Management	Other Professional Fields	Other Fields§	PROFESSIONAL/ OTHER FIELDS	TOTAL NONSCIENCES
1256	**699**	**366**	**380**	**400**	**3101**	**17237**	**411**	**370**	**199**	**1210**	**2190**	**2679**	**872**	**667**	**41**	**1580**	**6449**
38.8	79.7	45.4	72.8	58.7	50.6	70.2	62.5	43.4	40.0	58.0	53.5	41.9	74.9	56.9	50.6	65.4	50.0
83.1	38.9	66.4	62.4	51.3	64.5	53.0	79.8	81.1	60.3	76.3	76.3	81.0	50.6	68.7		58.1	73.8
1.6	6.2	7.4	6.8	8.0	4.8	5.4	3.6	4.1	16.6	3.1	4.6	3.4	6.3	3.3		4.9	4.2
5.6	50.1	21.9	25.8	30.8	23.3	35.5	10.5	11.4	18.6	14.6	13.7	10.2	34.9	20.4		28.5	15.9
9.7	4.9	4.4	5.0	10.0	7.4	6.1	6.1	3.5	4.5	6.0	5.5	5.4	8.3	7.6		8.5	6.2
53.2	58.5	60.7	62.6	60.5	57.4	57.8	59.4	56.8	52.3	59.6	58.4	74.3	66.6	68.2		66.7	67.0
34.5	34.0	29.8	29.5	26.8	32.2	33.3	32.4	35.1	38.2	31.8	33.1	17.3	22.2	21.0		21.8	23.7
12.3	7.4	9.6	7.9	12.8	10.4	8.9	8.3	8.1	9.5	8.6	8.5	8.4	11.1	10.8		11.5	9.2
33.8	32.3	35.8	34.7	35.4	33.9	31.8	35.5	35.0	34.9	35.3	35.3	41.2	35.3	37.5		36.3	38.0
64.0	64.1	46.4	52.4	20.8	55.0	65.3	62.3	70.5	49.2	55.5	58.8	34.4	34.7	27.4		30.8	41.8
75.2	75.1	91.5	86.3	87.5	80.0	71.4	88.1	86.5	88.4	86.2	86.8	94.8	82.9	92.5		86.8	90.1
10.0	9.1	11.9	11.2	12.2	10.4	8.6	12.0	11.6	11.7	12.0	11.9	17.5	12.0	14.2		12.9	14.4
7.3	6.5	8.6	7.8	7.6	7.4	6.4	8.9	7.7	8.0	8.2	8.2	8.1	6.9	8.1		7.4	7.9
19.2	7.0	16.4	11.8	12.3	14.3	35.9	10.0	4.9	14.1	6.5	7.6	5.6	2.8	3.3		3.1	5.6
13.1	3.1	9.3	8.4	5.8	8.9	16.7	7.1	3.5	9.0	3.3	4.6	2.1	1.4	1.3		1.5	2.8
3.3	2.6	5.7	1.8	3.8	3.3	16.1	0.2	0.5	3.0	1.3	1.1	1.6	0.6	1.3		0.9	1.3
1.9	1.1	0.3	0.5	1.3	1.3	1.3	1.2	0.0	0.5	0.6	0.6	0.9	0.6	0.1		0.4	0.7
0.9	0.1	1.1	1.1	1.5	0.8	1.8	1.5	0.8	1.5	1.3	1.3	1.0	0.2	0.4		0.3	0.9
69.6	85.4	75.4	79.7	76.0	75.9	55.3	79.8	89.7	76.9	85.6	84.4	86.6	85.4	87.4		85.7	85.6
26.1	52.8	54.1	62.4	49.3	42.9	23.1	61.6	81.1	67.3	67.6	68.7	67.3	72.8	34.3		64.3	67.0
17.0	7.7	3.3	3.9	5.5	10.2	19.9	3.2	2.7	5.0	5.6	4.6	4.6	8.1	5.8		7.2	5.2
10.2	15.5	6.3	6.3	10.0	10.4	7.0	6.8	1.4	0.0	1.5	2.3	6.5	2.4	5.2		3.6	4.4
11.7	2.6	5.7	2.6	5.3	7.0	2.3	4.4	1.4	2.0	7.5	5.4	4.8	0.9	19.3		8.9	6.0
4.5	6.9	6.0	4.5	6.0	5.4	3.1	3.9	3.2	2.5	3.4	3.4	3.4	1.1	2.7		1.8	3.0
11.2	7.6	8.2	8.4	11.8	9.8	8.7	10.2	5.4	9.0	7.9	8.0	7.9	11.8	9.3		11.2	8.7
14.7	4.0	7.1	6.6	5.5	9.2	25.0	6.6	3.0	7.0	3.7	4.4	2.9	1.6	1.8		1.8	3.2
4.5	3.0	9.3	5.3	6.8	5.1	11.0	3.4	1.9	7.0	2.8	3.2	2.6	1.1	1.5		1.3	2.5
52.3	61.8	47.3	53.9	50.8	53.9	37.2	49.4	59.2	53.3	56.0	55.1	66.0	70.3	65.7		67.6	62.7
17.3	23.6	28.1	25.8	25.3	22.1	18.2	30.4	30.5	23.6	29.6	29.4	20.6	15.1	21.7		18.1	22.9
657	**432**	**173**	**205**	**203**	**1670**	**6404**	**203**	**219**	**106**	**678**	**1206**	**1768**	**613**	**438**		**1068**	**4042**
15.7	41.4	26.6	18.0	32.5	25.8	50.9	12.8	5.5	7.5	7.2	7.9	6.2	33.1	11.2		23.8	11.4
14.8	26.6	41.6	44.9	35.0	26.8	20.3	52.7	67.1	65.1	58.4	59.6	26.8	46.3	40.6		43.9	41.1
4.9	4.2	4.6	7.3	4.9	5.0	3.0	6.4	5.0	0.9	3.2	3.9	36.3	2.4	9.8		5.8	18.6
49.6	3.0	4.6	3.9	9.4	22.4	10.9	2.0	1.4	2.8	9.6	6.2	10.0	1.8	16.0		7.8	8.3
2.7	3.9	2.3	1.5	2.5	2.8	2.5	6.4	2.3	0.9	4.7	4.2	1.1	1.6	6.6		3.7	2.7
22.4	27.3	29.5	34.6	31.0	26.9	21.3	34.0	46.1	51.9	34.4	38.0	15.3	40.8	26.0		34.6	27.2
14.9	22.9	16.8	18.0	13.8	17.4	15.1	9.4	8.7	6.6	12.5	10.8	13.5	28.2	12.1		21.4	14.8
12.0	6.7	11.0	4.4	7.9	9.1	11.6	5.4	3.2	3.8	9.3	7.0	8.1	4.2	12.1		7.5	7.6
7.9	2.8	2.9	1.5	5.4	5.0	7.4	3.4	1.8	2.8	5.2	4.1	11.3	3.1	7.8		5.1	7.5
4.6	2.5	1.2	2.4	4.4	3.4	3.2	3.0	2.7	0.9	3.7	3.2	2.0	0.5	2.3		1.3	2.2
25.9	16.9	18.5	14.6	21.7	20.9	29.1	25.1	18.7	11.3	18.1	18.8	30.0	8.5	24.0		15.2	22.8
12.3	20.8	20.2	24.4	15.8	17.2	12.4	19.7	18.7	22.6	16.8	18.2	19.7	14.7	15.8		15.0	18.0
6.8	5.3	7.5	6.8	5.9	6.4	5.3	6.9	5.0	6.6	4.9	5.4	5.9	4.1	3.7		3.9	5.2
16.0	11.8	16.8	10.7	12.3	13.9	12.7	16.3	15.5	10.4	13.9	14.3	12.7	12.2	11.6		11.9	13.0
14.3	10.6	12.7	16.6	14.3	13.5	12.8	13.3	16.4	17.9	13.9	14.6	14.7	15.8	12.6		14.2	14.5
6.1	3.2	4.6	3.4	4.9	4.7	5.0	5.4	3.7	9.4	8.6	7.2	9.4	7.3	7.8		7.7	8.3
13.1	21.5	14.5	14.6	13.3	15.6	13.1	18.7	15.5	8.5	15.5	15.4	14.5	16.2	12.1		14.6	14.8
3.8	0.9	4.0	4.9	0.5	2.8	3.7	5.9	7.3	1.9	4.7	5.1	5.4	6.0	6.8		6.3	5.6
11.1	5.8	3.5	7.3	5.4	7.8	8.1	6.9	7.3	6.6	8.0	7.5	8.0	10.0	13.2		11.1	8.7
6.2	2.3	8.7	5.4	4.4	5.1	4.8	3.9	1.8	3.8	4.1	3.6	5.8	4.4	4.6		4.4	4.8
11.3	5.8	9.8	15.1	11.8	10.2	12.0	8.4	10.0	13.2	8.6	9.2	9.7	8.8	6.4		7.9	9.1
6.2	2.3	3.5	2.9	3.9	4.3	3.2	4.9	3.7	7.5	4.1	4.5	4.2	2.8	3.4		3.0	4.0
4.4	29.4	13.3	11.7	22.7	14.9	17.9	9.4	11.9	10.4	13.3	12.1	8.0	11.1	16.7		13.7	10.7
0.6	0.9	1.2	0.5	0.5	0.7	1.3	0.0	1.8	3.8	0.6	1.0	1.5	1.3	1.1		1.3	1.3

§Statistics are not presented for this group because too few records contained the specific data.

APPENDIX TABLE A-3 (Continued)

Doctorates: Women

		1991 Total	Physics and Astronomy	Chemistry	Earth, Atmos. and Marine Sci.	Mathematics	Computer Sciences	PHYSICAL SCIENCES	ENGINEERING	Biochemistry	Other Biosciences	Biosciences Subtotal	Health Sciences	Agricultural Sciences	LIFE SCIENCES
Total Female		13765	152	507	185	194	116	1154	452	285	1474	1759	670	245	2674
Female as a Percent of Total Doctorates	%	36.8	10.8	23.1	22.1	18.7	14.6	18.4	8.7	37.4	38.0	37.9	63.9	19.8	38.6
U.S. Citizenship	%	78.7	46.7	64.9	77.3	45.4	69.8	61.7	59.1	65.3	72.9	71.7	81.6	58.4	73.0
Non-U.S., Permanent Visa		4.5	6.6	6.3	4.9	9.8	9.5	7.0	8.0	7.7	5.2	5.6	4.3	5.3	5.3
Non-U.S., Temporary Visa		12.4	45.4	25.8	11.9	41.8	19.8	28.2	30.3	25.3	19.0	20.0	10.1	33.1	18.7
Unknown		4.4	1.3	3.0	5.9	3.1	0.9	3.0	2.7	1.8	2.8	2.7	3.9	3.3	3.0
Married	%	52.7	44.1	49.7	48.6	51.5	55.2	49.7	54.9	55.8	49.6	50.6	57.3	55.5	52.7
Not Married		39.0	48.0	43.4	43.2	43.3	42.2	43.8	37.8	39.3	44.4	43.5	34.6	37.1	40.7
Unknown		8.3	7.9	6.9	8.1	5.2	2.6	6.5	7.3	4.9	6.0	5.9	8.1	7.3	6.5
Median Age at Doct.	Yrs	36.1	29.8	29.1	31.7	30.9	32.5	30.2	30.5	29.8	31.4	31.2	38.9	32.4	32.7
Percent with Bacc. in Same Field as Doctorate	%	52.1	75.7	80.3	54.6	79.9	34.5	70.9	70.4	24.2	61.0	55.0	63.4	46.9	56.4
Percent with Masters		81.1	67.1	35.5	71.9	82.5	88.8	58.8	83.4	29.1	49.8	46.4	90.6	90.2	61.5
Median Time Lapse From Bacc. to Doct.															
Total Time	Yrs	12.4	7.6	6.5	9.2	8.0	9.9	7.5	8.0	7.6	8.6	8.4	15.0	9.9	9.6
Registered Time		7.4	6.5	5.5	7.2	6.4	6.9	6.2	6.2	6.2	6.7	6.6	7.1	6.8	6.7
Postdoctoral Study Plans	%	21.5	62.5	50.1	36.8	21.1	15.5	41.2	24.6	83.5	70.4	72.5	14.3	34.7	54.5
Fellowship		12.1	25.0	22.1	18.4	10.3	6.0	18.3	9.3	57.5	42.9	45.3	7.5	8.6	32.4
Research Assoc.		6.9	36.8	27.0	17.3	7.7	7.8	21.6	13.3	21.8	21.2	21.3	4.9	22.4	17.3
Traineeship		1.1	0.7	0.2	0.5	1.0	0.9	0.5	1.5	0.4	2.1	1.8	0.7	2.4	1.6
Other		1.4	0.0	0.8	0.5	2.1	0.9	0.9	0.4	3.9	4.1	4.1	1.2	1.2	3.1
Planned Employment After Doctorate	%	71.4	30.9	43.6	55.7	73.7	81.0	52.7	69.9	12.6	24.7	22.7	79.3	60.0	40.3
Educ. Institution*		47.6	11.8	9.3	17.3	57.2	48.3	22.9	23.5	2.8	12.4	10.9	52.1	26.5	22.6
Industry/Business		9.6	13.2	28.0	18.4	11.3	30.2	21.9	34.1	7.0	5.7	5.9	7.5	14.7	7.1
Government		4.9	3.3	3.2	14.1	1.5	0.0	4.3	6.6	1.8	3.0	2.8	7.3	10.2	4.6
Nonprofit		4.8	0.7	1.0	1.1	0.0	0.0	0.7	1.5	0.0	1.1	0.9	8.4	2.9	3.0
Other & Unknown		4.6	2.0	2.2	4.9	3.6	2.6	2.9	4.2	1.1	2.5	2.3	4.0	5.7	3.0
Postdoc. Plans Unknown	%	7.1	6.6	6.3	7.6	5.2	3.4	6.1	5.5	3.9	5.0	4.8	6.4	5.3	5.2
Definite Postdoc. Study	%	15.0	42.8	36.3	24.9	12.4	11.2	28.8	14.6	63.2	54.1	55.5	9.1	21.6	40.8
Seeking Postdoc. Study		6.5	19.7	13.8	11.9	8.8	4.3	12.5	10.0	20.4	16.3	16.9	5.2	13.1	13.6
Definite Employment		50.3	23.0	30.6	36.8	48.5	60.3	36.6	43.8	7.4	15.2	13.9	60.3	39.2	27.9
Seeking Employment		21.1	7.9	13.0	18.9	25.3	20.7	16.1	26.1	5.3	9.5	8.8	19.0	20.8	12.5
Employment Commitments After Doctorate		6922	35	155	68	94	70	422	198	21	224	245	404	96	745
Primary Activity†															
R & D	%	17.8	54.3	65.8	51.5	27.7	42.9	50.2	59.1	52.4	42.4	43.3	26.2	52.1	35.2
Teaching		38.4	28.6	17.4	17.6	59.6	35.7	30.8	18.7	9.5	28.1	26.5	41.8	17.7	33.7
Administration		13.7	0.0	1.3	4.4	0.0	2.9	1.7	2.0	4.8	6.3	6.1	13.1	8.3	10.2
Prof. Services		15.4	2.9	5.8	13.2	1.1	2.9	5.2	7.6	9.5	11.2	11.0	8.4	6.3	9.0
Other		1.8	0.0	2.6	1.5	0.0	1.4	1.4	3.0	4.8	1.8	2.0	1.0	3.1	1.6
Secondary Activity															
R & D	%	29.5	25.7	15.5	22.1	52.1	35.7	28.9	21.7	14.3	27.7	26.5	40.8	14.6	32.8
Teaching		13.2	8.6	2.6	20.6	14.9	15.7	10.9	13.1	9.5	14.7	14.3	17.8	13.5	16.1
Administration		8.1	2.9	12.9	4.4	1.1	7.1	7.1	11.1	9.5	12.5	12.2	9.7	12.5	10.9
Prof. Services		8.7	2.9	10.3	2.9	8.5	4.3	7.1	8.6	4.8	9.8	9.4	6.4	12.5	8.2
Other		3.4	2.9	5.2	2.9	0.0	0.0	2.6	2.5	0.0	1.8	1.6	2.0	5.2	2.3
No Secondary Activity		24.2	42.9	46.5	35.3	11.7	22.9	32.7	33.3	42.9	23.2	24.9	13.9	29.2	19.5
Activity(ies) Unknown	%	13.0	14.3	7.1	11.8	11.7	14.3	10.7	9.6	19.0	10.3	11.0	9.4	12.5	10.3
Region of Employment After Doctorate‡															
New England	%	5.9	5.7	5.8	2.9	9.6	4.3	5.9	4.5	4.8	2.7	2.9	4.7	5.2	4.2
Middle Atlantic		13.3	11.4	13.5	4.4	12.8	17.1	12.3	17.2	14.3	8.5	9.0	9.9	10.4	9.7
East No. Central		14.1	8.6	18.1	8.8	13.8	11.4	13.7	12.6	19.0	9.8	10.6	17.8	8.3	14.2
West No. Central		7.6	8.6	6.5	2.9	13.8	1.4	6.9	3.5	4.8	6.3	6.1	5.0	13.5	6.4
South Atlantic		16.3	20.0	12.9	13.2	12.8	10.0	13.0	13.6	4.8	21.4	20.0	16.8	11.5	17.2
East So. Central		5.5	2.9	3.9	1.5	6.4	10.0	5.0	6.1	0.0	6.7	6.1	7.4	3.1	6.4
West So. Central		8.6	8.6	16.8	13.2	5.3	7.1	11.4	7.1	0.0	4.0	3.7	9.4	5.2	7.0
Mountain		4.9	0.0	4.5	13.2	2.1	2.9	4.7	4.0	9.5	5.8	6.1	3.7	7.3	5.0
Pacific & Insular		11.6	8.6	7.7	25.0	9.6	24.3	13.7	19.7	28.6	16.5	17.6	11.6	7.3	13.0
U.S., Region Unknown		5.1	11.4	5.2	2.9	4.3	4.3	5.0	3.5	4.8	4.5	4.5	5.4	1.0	4.6
Foreign		6.1	14.3	3.9	11.8	8.5	7.1	7.6	7.6	4.8	13.4	12.7	7.2	25.0	11.3
Region Unknown		1.0	0.0	1.3	0.0	1.1	0.0	0.7	0.5	4.8	0.4	0.8	1.0	2.1	1.1

NOTE: Field groupings may differ from those in reports published by federal sponsors of the Survey of Earned Doctorates. See inside the back cover for a description of fields as reported in this table. Physical Sciences includes Mathematics and Computer Sciences, as well as Physics/Astronomy, Chemistry, and Earth/Atmospheric/Marine Sciences. Refer also to the explanatory note about this table in front of Appendix A.

*Includes 2-year, 4-year, and foreign colleges and universities, medical schools, and elementary/secondary schools.

†Includes only recipients with definite employment plans. Revisions to the survey form in 1990 appear to have resulted in a higher rate of nonresponse to the item on work activity than in previous years. Among women, the nonresponse rate in 1991 was 13.0% compared to 5.3% in 1989 and was especially high among recipients planning to work in educational institutions, thereby affecting the percentages in teaching and administration.

‡Includes only recipients with definite employment plans.

Psychology	Economics	Anthropology and Sociology	Political Sci./ Internat'l Rel.	Other Social Sciences	SOCIAL SCI. INCL. PSYCH.	TOTAL SCIENCES	History	Eng. and Amer. Lang. and Lit.	Foreign Lang. and Lit.	Other Humanities	HUMANITIES	EDUCATION	Business and Management	Other Professional Fields	Other Fields §	PROFESSIONAL/ OTHER FIELDS	TOTAL NONSCIENCES
1984	**178**	**440**	**142**	**282**	**3026**	**7306**	**247**	**483**	**299**	**875**	**1904**	**3718**	**292**	**505**	**40**	**837**	**6459**
61.2	20.3	54.6	27.2	41.3	49.4	29.8	37.5	56.6	60.0	42.0	46.5	58.1	25.1	43.1	49.4	34.6	50.0
88.3	53.4	78.2	73.9	71.6	82.6	74.3	82.2	84.1	62.5	78.2	77.7	87.5	78.1	82.0		80.4	83.7
2.0	7.9	6.1	5.6	5.0	3.4	4.9	2.4	4.8	17.1	6.7	7.3	2.1	7.9	2.8		4.8	4.0
2.6	36.0	13.0	12.0	18.1	7.9	16.5	10.5	7.5	16.7	11.3	11.1	5.6	8.6	9.7		9.2	7.7
7.1	2.8	2.7	8.5	5.3	6.1	4.3	4.9	3.7	3.7	3.8	3.9	4.7	5.5	5.5		5.6	4.6
48.4	48.9	47.7	53.5	52.8	49.0	50.8	47.0	51.1	50.5	47.7	48.9	58.3	57.9	50.9		53.3	54.9
41.1	42.1	44.3	35.9	38.7	41.1	41.2	43.3	41.0	41.8	44.9	43.2	33.0	34.9	38.8		37.2	36.5
10.5	9.0	8.0	10.6	8.5	9.9	8.0	9.7	7.9	7.7	7.4	7.9	8.8	7.2	10.3		9.6	8.6
34.0	31.6	37.4	33.9	36.7	34.5	32.6	36.0	37.4	36.1	36.4	36.5	42.7	35.6	39.7		38.3	40.6
59.4	60.7	48.4	50.7	16.3	53.5	58.3	58.3	66.7	51.5	51.9	56.4	42.9	36.0	25.1		28.1	44.9
79.9	76.4	89.5	83.8	89.0	82.1	71.0	87.0	89.2	91.6	88.3	88.9	94.9	83.9	94.7		90.6	92.6
10.2	9.2	13.0	10.5	13.3	10.8	9.4	12.1	13.1	12.4	13.1	12.9	19.0	12.0	16.0		14.8	16.8
7.3	7.0	9.5	8.0	7.6	7.6	6.9	8.7	8.5	8.4	8.6	8.6	8.0	7.2	7.9		7.7	8.2
21.3	6.2	20.0	9.9	11.3	18.8	35.7	12.1	5.4	7.0	7.9	7.7	4.5	1.4	5.0		4.2	5.4
14.9	1.7	13.0	7.7	6.4	12.7	20.6	10.5	2.3	2.7	4.9	4.6	1.5	0.7	2.2		1.7	2.4
3.0	3.4	5.2	1.4	3.5	3.3	11.9	0.0	1.2	2.0	0.9	1.1	1.3	0.7	1.0		1.4	1.3
2.3	0.6	0.9	0.0	0.7	1.7	1.5	0.0	0.6	1.3	0.6	0.6	0.6	0.0	0.8		0.5	0.6
1.2	0.6	0.9	0.7	0.7	1.0	1.7	1.6	1.2	1.0	1.5	1.4	1.1	0.0	1.0		0.6	1.1
70.0	87.1	73.0	77.5	79.4	72.7	57.5	81.0	85.5	84.9	83.8	84.0	88.4	92.1	87.7		88.6	87.2
26.1	62.9	52.7	58.5	51.1	36.0	28.2	68.8	76.0	75.6	67.5	71.1	68.9	84.2	62.0		68.5	69.5
16.1	6.2	5.7	4.9	8.5	12.8	13.5	3.6	3.3	3.7	4.6	4.0	5.3	6.5	8.3		7.8	5.2
8.2	9.0	4.5	4.9	7.1	7.4	5.9	2.4	0.8	1.0	1.5	1.4	5.2	0.3	3.8		2.9	3.7
12.9	2.8	4.8	3.5	6.7	10.1	5.5	2.8	0.8	0.7	4.3	2.7	4.5	0.0	7.9		5.4	4.1
6.9	6.2	5.2	5.6	6.0	6.4	4.5	3.2	4.6	4.0	5.8	4.9	4.6	1.0	5.7		4.2	4.6
8.7	6.7	7.0	12.7	9.2	8.6	6.8	6.9	9.1	8.0	8.3	8.3	7.0	6.5	7.3		7.2	7.4
15.1	3.4	12.3	5.6	6.4	12.7	25.7	6.1	2.7	4.3	4.5	4.2	2.4	0.7	3.0		2.5	3.0
6.3	2.8	7.7	4.2	5.0	6.0	10.1	6.1	2.7	2.7	3.4	3.5	2.1	0.7	2.0		1.7	2.4
48.4	70.2	45.2	54.2	56.4	50.2	39.5	56.7	56.9	53.8	52.5	54.4	65.2	78.1	65.3		68.9	62.5
21.6	16.9	27.7	23.2	23.0	22.4	18.0	24.3	28.6	31.1	31.3	29.7	23.2	14.0	22.4		19.7	24.7
960	**125**	**199**	**77**	**159**	**1520**	**2885**	**140**	**275**	**161**	**459**	**1035**	**2425**	**228**	**330**		**577**	**4037**
12.1	49.6	26.1	26.0	26.4	19.2	30.6	15.7	4.0	9.3	9.8	9.0	6.0	30.3	10.6		18.5	8.6
12.6	36.8	50.8	53.2	39.6	24.5	27.4	60.0	69.8	75.2	64.5	67.0	37.0	53.5	47.6		48.7	46.3
4.6	0.0	4.5	0.0	6.9	4.2	5.2	5.7	2.5	0.6	5.7	4.1	28.7	3.1	13.6		9.7	19.7
60.7	2.4	5.5	3.9	13.2	40.9	25.1	3.6	2.2	1.2	2.8	2.5	10.7	3.1	12.4		9.2	8.4
1.7	2.4	2.5	0.0	2.5	1.8	1.8	2.1	2.2	0.0	3.5	2.4	1.7	0.4	0.9		0.7	1.8
22.3	31.2	40.7	44.2	32.7	27.6	28.7	47.1	46.9	51.6	40.1	44.6	21.1	51.3	35.8		41.2	30.0
16.1	32.8	15.6	15.6	17.0	17.5	15.9	12.9	4.7	5.0	9.6	8.0	10.8	29.4	12.4		19.2	11.3
9.7	3.2	7.5	5.2	10.1	8.7	9.2	5.0	7.3	3.7	6.5	6.1	8.5	0.9	6.7		4.3	7.3
6.9	5.6	4.5	2.6	12.6	6.8	7.3	2.9	3.3	1.9	7.2	4.7	12.1	2.2	12.1		8.1	9.6
6.9	2.4	2.5	5.2	1.9	5.3	4.0	1.4	0.4	1.2	6.1	3.2	2.9	1.3	3.0		2.4	2.9
29.8	16.0	18.6	10.4	14.5	24.6	25.1	17.9	18.2	23.0	16.8	18.3	28.7	5.3	15.2		11.4	23.6
8.3	8.8	10.6	16.9	11.3	9.4	9.8	12.9	19.3	13.7	13.7	15.1	15.8	9.6	14.8		13.2	15.3
5.5	8.0	5.5	3.9	6.3	5.7	5.3	9.3	6.9	9.9	7.8	8.1	5.3	7.0	7.0		6.9	6.3
17.5	17.6	13.1	18.2	11.3	16.3	14.1	15.0	14.5	19.9	14.2	15.3	10.8	14.5	18.8		16.6	12.8
12.8	12.0	15.6	20.8	17.6	14.0	13.9	12.1	17.1	11.2	14.2	14.2	13.8	17.1	15.5		15.8	14.2
8.2	7.2	5.0	2.6	3.1	6.9	6.6	6.4	5.5	7.5	7.6	6.9	9.2	7.5	7.9		7.8	8.4
15.1	21.6	13.1	22.1	16.4	15.9	15.6	16.4	13.8	10.6	14.4	13.9	17.9	17.5	17.0		17.7	16.8
3.8	4.0	3.5	0.0	5.0	3.7	4.7	5.7	5.8	5.6	4.1	5.0	6.5	8.8	3.6		5.5	6.0
8.6	2.4	7.5	7.8	6.9	7.8	8.0	4.3	10.2	5.0	6.5	7.0	9.8	9.2	8.8		9.4	9.0
4.9	3.2	3.5	5.2	5.7	4.7	4.7	2.9	5.5	6.8	3.7	4.5	5.4	4.4	4.8		4.7	5.1
14.2	6.4	15.1	9.1	11.9	13.2	13.7	17.1	11.3	11.2	12.2	12.5	10.1	7.0	6.4		6.4	10.2
6.7	0.0	6.5	3.9	6.3	5.9	5.3	5.0	2.9	2.5	2.6	3.0	6.0	2.6	4.5		3.8	4.9
1.5	16.0	10.6	6.5	8.2	4.8	7.1	5.0	5.8	8.7	10.9	8.4	4.2	3.9	5.2		4.9	5.4
1.3	1.6	1.0	0.0	1.3	1.2	1.0	0.7	0.7	1.2	1.7	1.3	1.0	0.4	0.6		0.5	1.0

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§Statistics are not presented for this group because too few records contained the specific data.

SOURCE: National Research Council, Survey of Earned Doctorates.

APPENDIX TABLE A-4 Statistical Profile of Doctorate Recipients, by Race/Ethnicity and Citizenship, 1991

		Total				Native American	Asian				Black			
				Non-U.S.					Non-U.S.				Non-U.S.	
		Total*	U.S.	Perm.	Temp.	Total	Total*	U.S.	Perm.	Temp.	Total*	U.S.	Perm.	Temp.
Total Number		**37451**	**24721**	**1814**	**8852**	**130**	**7271**	**762**	**729**	**5739**	**1355**	**933**	**149**	**269**
Male	%	63.2	56.2	65.9	80.8	56.2	78.2	61.5	65.7	82.0	53.7	41.3	85.2	78.8
Female		36.8	43.8	34.1	19.2	43.8	21.8	38.5	34.3	18.0	46.3	58.7	14.8	21.2
Doctoral Field														
Physical Sciences	%	16.8	14.0	17.7	25.0	10.8	25.4	18.8	22.4	26.6	6.6	4.3	8.7	13.8
Engineering		13.9	8.0	21.0	27.9	4.6	30.0	24.3	29.6	30.9	5.7	4.6	8.1	8.2
Life Sciences		18.5	18.7	18.5	19.0	14.6	18.8	24.4	18.9	18.0	14.2	9.1	20.8	27.9
Social Sciences		16.4	18.2	13.8	10.9	16.2	9.6	11.0	9.6	9.4	20.7	20.6	26.2	17.8
Humanities		10.9	12.7	13.2	5.8	7.7	4.2	5.8	5.5	3.8	9.0	9.8	6.7	7.8
Education		17.1	21.9	9.3	5.5	40.8	5.7	10.6	5.9	4.9	35.9	43.3	22.8	18.2
Professional/Other		6.5	6.4	6.4	6.0	5.4	6.5	5.1	8.1	6.4	7.9	8.4	6.7	6.3
Median Age at Doct.	Yrs	33.9	34.8	33.5	32.6	38.5	32.6	32.2	32.9	32.6	38.5	39.9	37.4	36.8
Median Time Lapse From Bacc. to Doct.														
Total Time	Yrs	10.4	11.4	10.0	9.1	14.0	9.1	9.3	9.9	9.1	13.8	16.0	10.9	10.9
Registered Time		7.0	7.3	7.1	6.4	7.4	6.5	6.9	7.0	6.5	7.6	8.1	7.5	6.4
Graduate School Support†														
GI Bill	%	1.1	1.6	0.0	0.0	1.5	0.1	0.5	0.0	0.0	1.5	2.3	0.0	0.0
Other Federal‡		9.3	12.8	4.3	2.9	20.8	3.6	17.1	2.3	1.9	14.0	16.0	7.4	11.2
State Government		1.0	1.3	0.5	0.5	3.1	0.5	0.8	0.4	0.4	2.2	2.9	0.7	0.7
Foreign Government		4.4	0.4	6.3	16.0	2.3	8.3	0.0	2.9	10.1	5.2	0.1	8.1	21.2
National Fellow (nonfed.)		4.5	5.3	3.2	3.6	5.4	2.7	5.2	1.9	2.4	11.1	12.3	3.4	11.2
Univ. Teaching Asst.	%	46.3	47.5	53.7	52.0	37.7	52.0	43.2	52.4	53.3	33.9	29.9	41.6	44.2
Univ. Research Asst.‡		45.9	42.1	55.1	64.8	30.0	68.4	55.8	65.8	70.4	28.0	20.5	46.3	43.9
Other University		22.0	25.5	22.1	17.1	24.6	17.3	22.3	18.1	16.6	31.1	35.5	29.5	17.1
Business/Employer		5.5	7.2	4.1	2.2	5.4	2.4	6.7	3.7	1.6	4.9	6.1	0.7	3.0
Self/Family Sources		67.2	79.9	69.1	46.6	86.2	49.8	69.4	62.6	45.7	72.6	80.6	73.8	45.0
GSL(Stafford) Loan‡	%	21.3	30.9	16.3	0.2	33.1	3.8	24.1	11.4	0.2	30.0	36.8	41.6	0.4
Other Loans‡		7.7	10.5	6.1	2.3	13.8	2.1	8.7	3.6	1.0	13.1	15.4	14.8	4.1
Other Sources		2.8	2.9	2.6	3.1	6.2	2.1	2.6	1.2	2.1	3.3	1.9	3.4	8.2
Unknown Sources		6.3	0.8	0.7	1.6	0.0	1.2	0.5	0.7	1.3	1.6	1.1	1.3	3.3
Postdoctoral Plans														
Postdoctoral Study	%	25.4	23.3	27.5	36.6	19.2	37.2	34.0	30.6	38.5	16.7	13.3	22.8	25.3
Planned Employment	%	66.5	74.3	68.9	59.1	78.5	58.7	62.9	66.1	57.3	80.1	83.9	73.2	71.0
Educ. Institution§		39.7	45.4	36.3	33.3	54.6	30.4	26.9	28.1	31.2	56.5	62.3	45.0	43.5
Industry/Business		13.6	13.7	21.4	14.8	13.1	18.8	24.9	28.3	16.9	6.9	6.2	11.4	7.1
Government		5.8	6.2	3.8	6.2	6.2	5.1	6.2	3.7	5.1	7.7	7.4	5.4	9.7
Nonprofit		3.9	5.1	2.4	1.5	2.3	1.4	2.4	0.7	1.3	3.9	3.9	4.7	3.7
Other & Unknown		3.6	3.9	5.0	3.3	2.3	3.1	2.5	5.3	2.8	5.0	4.2	6.7	7.1
Postdoc. Plans Unknown	%	8.1	2.4	3.6	4.2	2.3	4.1	3.1	3.3	4.2	3.2	2.8	4.0	3.7
Definite Postdoc. Study	%	17.6	17.5	16.1	21.9	14.6	22.1	24.4	18.1	22.4	9.5	8.7	10.1	12.3
Seeking Postdoc. Study		7.9	5.8	11.4	14.7	4.6	15.0	9.6	12.5	16.1	7.2	4.6	12.8	13.0
Definite Employment		46.4	54.3	37.0	36.7	51.5	34.5	41.9	30.7	34.0	52.8	59.2	31.5	42.4
Seeking Employment		20.1	20.0	31.9	22.4	26.9	24.2	21.0	35.4	23.3	27.3	24.8	41.6	28.6
Employment Location after Doctorate ‖		**17368**	**13413**	**671**	**3250**	**67**	**2505**	**319**	**224**	**1951**	**715**	**552**	**47**	**114**
U.S.	%	87.3	97.3	84.1	47.4	95.5	62.0	95.9	86.6	54.0	87.4	98.0	89.4	36.8
Foreign		11.5	1.8	14.2	50.5	4.5	35.8	2.2	10.7	43.8	11.2	0.4	10.6	62.3
Unknown		1.2	0.9	1.8	2.2	0.0	2.2	1.9	2.7	2.2	1.4	1.6	0.0	0.9

NOTE: Field groupings may differ from those in reports published by federal sponsors of the Survey of Earned Doctorates. See inside the back cover for a description of fields as reported in this table. Refer also to the explanatory note about this table in front of Appendix A for a discussion of past changes in the survey question on race/ethnicity.

*Includes individuals who did not report their citizenship at time of doctorate.
†In this table, a recipient counts once in each source category from which he or she received support. Since students indicate multiple sources of support, the vertical percentages sum to more than 100 percent. (Data on the "primary" source of support for doctorate recipients are presented in the body of the report.)
‡Because federal support obtained through the university cannot always be determined, no distinction is made between federal and university research assistants in this table. Both types of support are grouped under "University Research Assistant." Federal loans are counted in the categories for loans.
§Includes 2-year, 4-year, and foreign colleges and universities, medical schools, and elementary/secondary schools.
‖ Includes only recipients with definite employment plans.

White				Puerto Rican	Mexican American				Other Hispanic				Other & Unknown		
Total*	U.S.	Non-U.S. Perm.	Non-U.S. Temp.	Total	Total*	U.S.	Non-U.S. Perm.	Non-U.S. Temp.	Total*	U.S.	Non-U.S. Perm.	Non-U.S. Temp.	Total*	U.S.	Non-U.S.
24671	**21859**	**745**	**2039**	**187**	**263**	**210**	**16**	**36**	**830**	**313**	**118**	**394**	**2744**	**331**	**428**
58.5	56.6	61.6	77.7	44.4	60.1	55.7	75.0	77.8	65.7	51.1	64.4	77.7	72.3	71.3	83.2
41.5	43.4	38.4	22.3	55.6	39.9	44.3	25.0	22.2	34.3	48.9	35.6	22.3	27.7	28.7	16.8
15.0	14.2	16.4	23.2	10.7	9.9	10.0	0.0	13.9	17.6	12.5	16.1	22.3	15.6	19.9	19.6
9.4	7.6	17.3	25.5	5.3	8.4	6.7	0.0	19.4	11.4	7.7	10.2	15.0	18.6	11.2	24.3
18.9	19.1	16.9	17.7	12.8	19.0	12.9	43.8	44.4	22.8	14.7	18.6	29.9	15.5	20.5	22.9
17.7	18.2	15.0	13.1	24.1	22.8	24.3	12.5	19.4	18.6	25.6	16.1	14.0	18.8	15.4	12.6
13.0	13.0	20.0	10.2	17.1	11.4	11.9	25.0	2.8	15.2	17.3	24.6	10.7	9.8	16.0	6.5
19.7	21.4	9.1	5.2	26.7	25.1	30.0	18.8	0.0	11.0	18.2	9.3	5.6	13.7	11.2	7.2
6.4	6.5	5.2	5.1	3.2	3.4	4.3	0.0	0.0	3.5	4.2	5.1	2.5	8.1	5.7	6.8
34.3	34.7	33.2	31.7	35.2	35.4	35.5	37.0	34.5	34.5	35.5	34.7	34.1	33.8	33.3	33.9
10.9	11.3	9.8	8.3	12.1	11.8	11.8	13.2	10.3	10.5	11.1	11.0	10.0	10.4	10.2	10.1
7.1	7.2	7.1	6.2	7.7	7.5	7.7	8.0	6.0	6.7	7.4	6.7	6.2	6.7	7.1	6.5
1.4	1.6	0.0	0.0	1.1	1.9	2.4	0.0	0.0	0.4	1.0	0.0	0.0	0.1	1.2	0.0
11.2	12.1	5.8	3.2	18.2	19.8	23.8	0.0	5.6	10.4	16.6	4.2	7.4	3.1	19.0	5.1
1.1	1.2	0.7	0.5	4.3	3.8	3.3	0.0	8.3	0.7	1.3	0.0	0.5	0.1	0.6	0.2
2.8	0.4	7.9	25.9	1.1	8.4	0.0	18.8	50.0	17.3	0.3	7.6	33.8	3.8	0.3	23.8
4.8	4.8	4.4	5.1	8.0	10.3	12.9	0.0	0.0	6.3	7.3	3.4	6.3	1.7	7.9	4.7
49.1	48.5	58.7	52.3	43.9	43.7	45.7	31.3	38.9	49.4	45.7	55.9	50.8	12.1	49.5	38.3
44.2	42.8	50.5	56.6	24.6	34.6	33.8	25.0	44.4	47.2	39.6	42.4	54.8	13.3	45.9	48.6
24.6	25.1	23.5	19.8	34.8	30.0	32.9	25.0	16.7	21.6	25.6	28.8	16.2	5.0	24.5	12.9
6.9	7.3	5.2	3.3	6.4	6.1	7.1	6.3	0.0	4.2	4.2	3.4	4.6	1.1	5.1	2.8
78.0	80.5	75.0	52.6	74.9	69.6	78.1	75.0	19.4	61.0	78.3	70.3	44.7	14.2	67.7	37.6
27.7	30.6	16.5	0.4	45.5	32.7	40.0	12.5	0.0	16.4	36.1	18.6	0.3	3.8	30.5	0.7
9.6	10.2	6.3	4.5	16.6	16.3	18.6	25.0	0.0	8.8	10.2	8.5	7.9	1.5	9.4	2.3
3.1	2.9	3.8	5.1	4.8	3.8	3.8	6.3	2.8	3.4	1.6	4.2	4.6	0.8	2.4	3.3
0.8	0.7	0.4	1.4	1.1	2.3	1.0	0.0	11.1	0.8	1.3	0.0	0.8	73.7	6.9	5.1
24.2	23.2	25.1	34.7	19.3	25.9	25.7	25.0	27.8	30.5	28.4	32.2	31.7	8.2	27.2	31.3
73.3	74.4	71.4	61.6	78.6	70.7	72.4	75.0	58.3	66.1	67.7	63.6	65.5	17.4	64.7	59.8
44.5	45.3	42.1	36.9	52.4	46.0	50.0	37.5	27.8	41.6	43.5	39.8	40.1	9.6	35.3	33.6
13.7	13.8	17.3	12.1	8.0	6.5	5.2	25.0	5.6	10.6	10.5	14.4	9.6	3.8	15.4	11.9
6.2	6.1	3.6	7.7	7.5	8.4	6.2	6.3	19.4	6.6	5.1	3.4	8.9	1.9	5.7	7.5
4.9	5.3	3.5	1.6	5.9	5.7	6.7	0.0	2.8	2.5	3.2	2.5	2.0	0.9	4.2	2.6
3.9	3.9	4.8	3.3	4.8	4.2	4.3	6.3	2.8	4.8	5.4	3.4	4.8	1.2	3.9	4.2
2.5	2.3	3.5	3.7	2.1	3.4	1.9	0.0	13.9	3.4	3.8	4.2	2.8	74.4	8.2	8.9
18.0	17.7	15.3	22.9	11.8	19.0	19.0	18.8	19.4	19.9	18.2	18.6	21.6	5.0	19.9	16.6
6.2	5.6	9.8	11.8	7.5	6.8	6.7	6.3	8.3	10.6	10.2	13.6	10.2	3.2	7.3	14.7
53.3	54.7	45.2	41.2	54.5	52.9	56.7	25.0	41.7	45.4	47.3	33.1	47.2	11.6	46.2	37.9
20.0	19.8	26.2	20.4	24.1	17.9	15.7	50.0	16.7	20.7	20.4	30.5	18.3	5.8	18.4	22.0
13145	**11955**	**337**	**840**	**102**	**139**	**119**	**4**	**15**	**377**	**148**	**39**	**186**	**318**	**153**	**162**
93.2	97.4	82.2	39.4	98.0	89.2	97.5	75.0	33.3	66.3	97.3	89.7	37.1	60.1	90.8	30.9
5.9	1.8	16.3	58.2	1.0	10.1	1.7	25.0	66.7	31.8	0.7	10.3	60.8	36.5	4.6	66.7
0.9	0.8	1.5	2.4	1.0	0.7	0.8	0.0	0.0	1.9	2.0	0.0	2.2	3.5	4.6	2.5

SOURCE: National Research Council, Survey of Earned Doctorates.

APPENDIX TABLE A-5 Sources of Graduate School Support for Doctorate Recipients, by Broad Field and Gender, 1991

Sources of Support in Graduate School		Total		Physical Sciences		Engineering		Life Sciences		Social Sciences		Humanities		Education		Prof/Other Fields	
		Men/Women		Men/Women		Men/Women		Men/Women		Men/Women		Men/Women		Men/Women		Men/Women	
Federal Fellow/ Trainee	N	1151	1067	156	53	93	30	662	620	155	257	53	60	22	37	10	10
	V*	5.2	8.2	3.2	4.8	2.1	6.8	16.5	24.0	5.5	9.1	2.6	3.3	0.9	1.1	0.7	1.3
	H*	100.0	100.0	13.6	5.0	8.1	2.8	57.5	58.1	13.5	24.1	4.6	5.6	1.9	3.5	0.9	0.9
GI Bill	N	326	72	25	1	36	2	28	10	73	37	41	2	84	17	39	3
	V	1.5	0.6	0.5	0.1	0.8	0.5	0.7	0.4	2.6	1.3	2.0	0.1	3.3	0.5	2.7	0.4
	H	100.0	100.0	7.7	1.4	11.0	2.8	8.6	13.9	22.4	51.4	12.6	2.8	25.8	23.6	12.0	4.2
Other Federal Support†	N	823	617	178	46	145	24	157	141	153	169	103	97	58	108	29	32
	V	3.7	4.7	3.7	4.1	3.3	5.5	3.9	5.5	5.4	6.0	5.0	5.3	2.3	3.1	2.0	4.1
	H	100.0	100.0	21.6	7.5	17.6	3.9	19.1	22.9	18.6	27.4	12.5	15.7	7.0	17.5	3.5	5.2
State Government	N	213	160	44	13	23	7	59	34	27	35	15	18	35	41	10	12
	V	1.0	1.2	0.9	1.2	0.5	1.6	1.5	1.3	1.0	1.2	0.7	1.0	1.4	1.2	0.7	1.5
	H	100.0	100.0	20.7	8.1	10.8	4.4	27.7	21.3	12.7	21.9	7.0	11.3	16.4	25.6	4.7	7.5
Foreign Government	N	1333	309	221	27	375	22	307	82	160	65	92	56	90	42	88	15
	V	6.0	2.4	4.6	2.4	8.6	5.0	7.6	3.2	5.6	2.3	4.5	3.1	3.6	1.2	6.2	1.9
	H	100.0	100.0	16.6	8.7	28.1	7.1	23.0	26.5	12.0	21.0	6.9	18.1	6.8	13.6	6.6	4.9
National Fellow (nonfed)	N	937	747	167	45	151	35	174	132	171	173	181	234	47	81	46	47
	V	4.3	5.7	3.5	4.1	3.5	8.0	4.3	5.1	6.0	6.1	8.8	12.9	1.9	2.3	3.2	6.0
	H	100.0	100.0	17.8	6.0	16.1	4.7	18.6	17.7	18.2	23.2	19.3	31.3	5.0	10.8	4.9	6.3
University Teaching Assistant	N	11246	6095	3421	829	1873	206	1461	1006	1662	1446	1494	1357	595	859	740	392
	V	51.0	46.6	70.9	74.8	43.1	47.0	36.4	39.0	58.5	51.2	72.5	74.7	23.6	24.4	51.8	49.8
	H	100.0	100.0	30.4	13.6	16.7	3.4	13.0	16.5	14.8	23.7	13.3	22.3	5.3	14.1	6.6	6.4
University Research Assistant†	N	12132	5055	3675	823	3415	346	2541	1503	1193	1187	343	318	448	616	517	262
	V	55.1	38.7	76.2	74.2	78.6	79.0	63.3	58.3	42.0	42.0	16.6	17.5	17.8	17.5	36.2	33.3
	H	100.0	100.0	30.3	16.3	28.1	6.8	20.9	29.7	9.8	23.5	2.8	6.3	3.7	12.2	4.3	5.2
University Fellow	N	3436	1978	688	179	521	76	593	354	589	483	651	528	171	247	223	111
	V	15.6	15.1	14.3	16.1	12.0	17.4	14.8	13.7	20.7	17.1	31.6	29.1	6.8	7.0	15.6	14.1
	H	100.0	100.0	20.0	9.0	15.2	3.8	17.3	17.9	17.1	24.4	18.9	26.7	5.0	12.5	6.5	5.6
Other University	N	1719	1646	192	74	187	21	295	247	342	450	324	293	234	457	145	104
	V	7.8	12.6	4.0	6.7	4.3	4.8	7.3	9.6	12.0	15.9	15.7	16.1	9.3	13.0	10.1	13.2
	H	100.0	100.0	11.2	4.5	10.9	1.3	17.2	15.0	19.9	27.3	18.8	17.8	13.6	27.8	8.4	6.3
Business/ Employer	N	1266	779	214	39	328	40	115	99	125	145	94	77	279	323	111	56
	V	5.7	6.0	4.4	3.5	7.6	9.1	2.9	3.8	4.4	5.1	4.6	4.2	11.1	9.2	7.8	7.1
	H	100.0	100.0	16.9	5.0	25.9	5.1	9.1	12.7	9.9	18.6	7.4	9.9	22.0	41.5	8.8	7.2
Own Earnings	N	10765	8249	1493	345	1422	138	1535	1132	1784	1908	1476	1224	2154	2967	901	535
	V	48.9	63.1	31.0	31.1	32.7	31.5	38.2	43.9	62.8	67.5	71.6	67.4	85.4	84.4	63.1	68.0
	H	100.0	100.0	13.9	4.2	13.2	1.7	14.3	13.7	16.6	23.1	13.7	14.8	20.0	36.0	8.4	6.5
Spouse's Earnings	N	5375	4522	871	242	657	89	993	737	821	1002	723	652	875	1486	435	314
	V	24.4	34.6	18.1	21.8	15.1	20.3	24.7	28.6	28.9	35.5	35.1	35.9	34.7	42.3	30.4	39.9
	H	100.0	100.0	16.2	5.4	12.2	2.0	18.5	16.3	15.3	22.2	13.5	14.4	16.3	32.9	8.1	6.9
Family Support	N	5377	2960	1030	219	1212	85	892	535	861	873	626	503	388	570	368	175
	V	24.4	22.6	21.4	19.7	27.9	19.4	22.2	20.7	30.3	30.9	30.4	27.7	15.4	16.2	25.8	22.2
	H	100.0	100.0	19.2	7.4	22.5	2.9	16.6	18.1	16.0	29.5	11.6	17.0	7.2	19.3	6.8	5.9
Guaranteed Student Loan (Stafford)	N	4495	3467	680	169	355	41	873	521	1034	1199	670	577	585	726	298	234
	V	20.4	26.5	14.1	15.2	8.2	9.4	21.7	20.2	36.4	42.4	32.5	31.8	23.2	20.7	20.9	29.7
	H	100.0	100.0	15.1	4.9	7.9	1.2	19.4	15.0	23.0	34.6	14.9	16.6	13.0	20.9	6.6	6.7
Perkins Loan (NDSL)	N	937	787	86	22	73	8	144	84	261	339	188	144	126	156	59	34
	V	4.3	6.0	1.8	2.0	1.7	1.8	3.6	3.3	9.2	12.0	9.1	7.9	5.0	4.4	4.1	4.3
	H	100.0	100.0	9.2	2.8	7.8	1.0	15.4	10.7	27.9	43.1	20.1	18.3	13.4	19.8	6.3	4.3
Other Loans	N	732	680	84	27	103	12	115	83	169	235	86	93	111	178	64	52
	V	3.3	5.2	1.7	2.4	2.4	2.7	2.9	3.2	5.9	8.3	4.2	5.1	4.4	5.1	4.5	6.6
	H	100.0	100.0	11.5	4.0	14.1	1.8	15.7	12.2	23.1	34.6	11.7	13.7	15.2	26.2	8.7	7.6
Other Sources	N	561	483	83	34	59	8	120	111	94	115	68	62	75	120	62	33
	V	2.5	3.7	1.7	3.1	1.4	1.8	3.0	4.3	3.3	4.1	3.3	3.4	3.0	3.4	4.3	4.2
	H	100.0	100.0	14.8	7.0	10.5	1.7	21.4	23.0	16.8	23.8	12.1	12.8	13.4	24.8	11.1	6.8
Unduplicated Total‡		22035	13070	4822	1109	4343	438	4016	2579	2841	2826	2062	1816	2522	3515	1429	787

NOTE: In this table, a recipient counts once in each source category from which he or she received support. Since students indicate multiple sources of support, the vertical percentages sum to more than 100 percent. (Data on the "primary" source of support for doctorate recipients are presented in the body of the report.) Field groupings may differ from those in reports published by federal sponsors of the Survey of Earned Doctorates. See inside the back cover for a description of fields as reported in this table. Refer also to the explanatory note about this table in front of Appendix A.

*V denotes vertical percentage; H denotes horizontal percentage.
†Because federal support obtained through the university cannot always be determined, no distinction is made between federal and university research assistants in this table. Both types of support are grouped under "University Research Assistant." Federal loans are displayed separately in the categories for loans.
‡The 2,346 Ph.D.s who did not report sources of support are omitted from this total. Percentages are based only on known responses.

SOURCE: National Research Council, Survey of Earned Doctorates.

APPENDIX TABLE A-6 State of Doctoral Institution of Doctorate Recipients, by Broad Field and Gender, 1991

	Total		Physical Sciences		Engineering		Life Sciences		Social Sciences		Humanities		Education		Prof./Other Fields	
	Men/Women		Men/Women		Men/Women		Men/Women		Men/Women		Men/Women		Men/Women		Men/Women	
U.S. Total*	23686	13765	5122	1154	4760	452	4254	2674	3101	3026	2190	1904	2679	3718	1580	837
Alabama	226	161	40	6	47	4	55	44	16	22	9	2	33	72	26	11
Alaska	9	1	8	0	0	0	1	1	0	0	0	0	0	0	0	0
Arizona	460	209	134	18	88	5	77	37	52	34	36	24	44	77	29	14
Arkansas	82	41	9	3	7	1	23	6	4	6	6	3	23	21	10	1
California	2819	1622	721	161	604	75	440	295	465	540	239	210	215	284	135	57
Colorado	439	213	115	32	102	12	79	33	65	46	24	21	37	55	17	14
Connecticut	354	233	87	19	30	6	75	52	60	50	78	70	15	29	9	7
Delaware	94	39	28	5	33	4	5	3	8	9	10	13	9	5	1	0
Dist. of Columbia	240	195	25	12	46	4	20	30	61	46	40	43	22	39	26	21
Florida	666	449	107	26	106	16	108	50	83	82	41	38	160	208	61	29
Georgia	484	308	67	12	97	5	96	58	60	64	43	34	70	115	51	20
Hawaii	88	55	16	1	2	0	26	18	30	9	11	16	2	11	1	0
Idaho	46	30	9	0	10	0	15	7	1	2	0	3	11	18	0	0
Illinois	1383	746	295	64	291	22	216	160	189	162	160	102	147	187	85	49
Indiana	658	335	134	36	142	11	99	68	72	64	99	71	65	69	47	16
Iowa	464	210	117	28	89	2	93	43	32	18	34	30	73	76	26	13
Kansas	228	143	39	4	33	3	63	32	27	21	25	18	38	55	3	10
Kentucky	174	90	19	1	18	1	48	20	19	25	18	10	13	28	39	5
Louisiana	262	155	59	26	29	2	74	38	26	25	30	29	12	23	32	12
Maine	21	11	3	2	6	0	7	3	4	3	0	0	1	2	0	1
Maryland	465	371	120	30	79	20	124	105	54	75	40	47	35	71	13	23
Massachusetts	1370	753	350	80	283	44	188	148	211	127	126	116	143	197	69	41
Michigan	889	479	171	38	208	15	164	91	106	115	75	64	111	120	54	36
Minnesota	503	292	92	17	79	7	133	67	76	64	25	38	48	80	50	19
Mississippi	200	129	21	6	15	0	41	10	24	30	6	5	67	70	26	8
Missouri	388	232	75	14	77	4	62	38	50	70	26	20	48	67	50	19
Montana	37	19	11	2	5	0	11	3	5	6	0	0	5	8	0	0
Nebraska	121	98	15	0	5	1	38	20	14	12	10	11	21	44	18	10
Nevada	25	12	14	1	3	0	5	1	3	5	0	1	0	4	0	0
New Hampshire	51	25	12	3	11	2	18	7	7	6	1	5	2	2	0	0
New Jersey	460	249	114	22	115	19	63	38	66	54	56	62	25	34	21	20
New Mexico	153	77	49	9	26	2	30	8	15	17	6	9	24	30	3	2
New York	2273	1467	462	119	436	34	373	250	361	373	315	264	203	333	123	94
North Carolina	547	352	117	34	119	10	137	109	57	59	55	33	39	98	23	9
North Dakota	40	23	6	3	3	0	18	3	5	5	2	3	6	9	0	0
Ohio	1003	589	214	42	213	18	164	109	108	121	88	67	145	179	71	53
Oklahoma	223	155	31	7	54	6	34	17	28	25	10	18	57	69	9	13
Oregon	290	124	61	10	35	1	75	28	27	21	13	12	62	48	17	4
Pennsylvania	1251	720	273	47	309	31	140	112	168	161	109	118	145	193	107	58
Rhode Island	166	102	59	28	25	1	30	20	19	22	32	31	0	0	1	0
South Carolina	220	133	61	9	37	3	45	34	14	13	5	14	40	53	18	7
South Dakota	30	17	1	0	6	0	9	3	2	5	0	0	12	9	0	0
Tennessee	315	260	42	13	61	5	56	43	40	64	33	20	52	103	31	12
Texas	1501	829	308	68	354	23	248	176	145	139	108	91	179	262	159	70
Utah	260	93	51	11	56	3	46	19	42	28	11	8	42	17	12	7
Vermont	28	23	3	2	7	0	14	7	1	7	0	3	3	4	0	0
Virginia	522	311	104	26	141	7	86	71	52	67	30	23	72	98	37	19
Washington	434	223	105	27	85	11	114	58	41	30	40	39	28	46	21	12
West Virginia	72	43	4	0	21	2	15	8	7	9	4	2	21	22	0	0
Wisconsin	590	276	122	25	107	10	138	69	73	58	59	38	45	56	46	20
Wyoming	47	20	18	4	5	0	14	3	3	3	0	0	6	10	1	0
Puerto Rico	15	23	4	1	0	0	1	1	3	7	2	5	3	8	2	1

NOTE: Field groupings may differ from those in reports published by federal sponsors of the Survey of Earned Doctorates. See inside the back cover for a description of fields as reported in this table. Refer also to the explanatory note about this table in front of Appendix A.

*Includes the 50 states, the District of Columbia, and Puerto Rico.

SOURCE: National Research Council, Survey of Earned Doctorates.

APPENDIX TABLE A-7 Institutions Granting Doctorates, by Major Field, 1991

	1991 Total	Physics and Astronomy	Chemistry	Earth, Atmos., and Marine Sci.	Math and Computer Sci.	Engineering	Biosciences	Health Sciences	Agricultural Sciences	Psychology	Other Social Sciences	History	Eng. and Amer. Lang. and Lit.	Other Humanities	Education	Professional/ Other Fields
TOTAL ALL INSTITUTIONS*	37451	1408	2194	837	1837	5212	4642	1049	1237	3240	2887	658	853	2583	6397	2417
ALABAMA	387	15	14	2	15	51	48	34	17	33	5	2	2	7	105	37
Auburn University	125	4	7	1	8	22	12	3	17	13	3	1	1		32	1
Univ of Alabama-Birmingham	95	3			2	4	30	31		11					11	3
Univ of Alabama-Huntsville	21	5			3	13										
Univ of Alabama-University	144	3	7	1	2	12	4			9	2	1	1	7	62	33
Univ of South Alabama	2						2									
ALASKA	10	2		6			1		1							
Univ of Alaska	10	2		6			1		1							
ARIZONA	669	47	44	35	26	93	76	11	27	36	50	4	8	48	121	43
Arizona State Univ	226	12	15	8	9	41	11	2		23	22		3	14	39	27
Northern Arizona Univ	59						8				4	1			46	
Univ of Arizona	384	35	29	27	17	52	57	9	27	13	24	3	5	34	36	16
ARKANSAS	123	8	4			8	18		11	10		4	4	1	44	11
U of Arkansas-Fayetteville	118	8	4			8	13		11	10		4	4	1	44	11
U of Arkansas-Med Sci Campus	5						5									
CALIFORNIA	4441	214	264	137	267	679	575	84	76	640	365	80	79	290	499	192
Biola Univ	6									4					2	
Cal Inst of Integral Studies	19									19						
Cal Inst of Technology	154	32	17	14	15	50	22				4					
Cal Sch Prof Psych-Alameda	56									56						
Cal Sch Prof Psych-Fresno	49									49						
Cal Sch Prof Psych-Alhambra	68									68						
Cal Sch Prof Psych-San Diego	53									53						
Claremont Graduate School†	71				3		2			14	9	3	1	7	25	7
Fielding Institute	41									34					4	3
Fuller Theological Seminary	44									30	3			3		8
Golden Gate Baptist Theol Sem	3													2		1
Graduate Theological Union	23													10		13
Hebrew Union College	1														1	
La Sierra Univ	4														4	
Loma Linda Univ	21						16	4							1	
Naval Postgraduate School	7	1		1	3	2										
Pacific Grad Sch of Psych	14									14						
Pepperdine Univ	26														26	
Rand Grad Sch of Policy Studies	10										10					
Saybrook Institute	17									17						
Stanford Univ	556	34	26	28	40	199	46		6	18	43	12	9	39	38	18
U.S. International Univ	155									94					35	26
Univ of California-Berkeley	778	39	55	14	71	157	94	15	22	14	97	22	21	68	44	45
Univ of California-Davis†	347	8	36	9	14	46	161	6	31	2	10	3	10	11		
Univ of California-Irvine	127	10	12		17	22	19			7	14	3	8	13		2
Univ of Calif-Los Angeles	572	37	26	20	47	71	76	20		32	69	19	14	51	72	18
Univ of Calif-Riverside	90	13	10	1	7		19		14	7	6	2	2	3	6	
Univ of Calif-San Diego†	210	13	19	24	23	26	36			16	30	4	2	17		
Univ of Calif-San Francisco	80		17		2	3	25	20		3	10					
Univ of Calif-Santa Barbara	186	14	16	11	7	25	21			16	31	5	5	19	16	
Univ of Calif-Santa Cruz	73	8	8	14	5		11		3	6	5	5	4	4		
Univ of La Verne	21														17	4
Univ of the Pacific	15		1				2	1							11	
Univ of San Diego	26							14							12	
Univ of San Francisco	68														68	
Univ of Santa Clara	1															1
Univ of Southern California	422	5	21	1	13	78	25	4		40	24	2	3	43	117	46
Wright Institute, The	27									27						
COLORADO	652	29	46	38	34	114	65	12	35	49	62	3	13	29	92	31
Colorado School of Mines	32		1	12	1	12					5					1
Colorado State Univ	198	1	22	8	3	42	36	4	35	15	11				20	1
Univ of Colorado	298	26	23	18	26	60	27	8		14	28	3	7	15	27	16
Univ of Denver	81	2					1			18	18		6	7	16	13
Univ of Northern Colorado	43				4		1			2				7	29	
CONNECTICUT	587	28	38	5	35	36	106	15	6	32	78	28	17	103	44	16
Univ of Connecticut	228	8	16	1	17	22	43	3	1	19	28	5	7	13	43	2
Univ of Hartford	2													1	1	
Univ of New Haven	2															2
Wesleyan Univ	11		3		4		2							2		
Yale Univ	344	20	19	4	14	14	61	12	5	13	50	23	10	87		12
DELAWARE	133	11	10	8	4	37	7		1	7	10	5	12	6	14	1
Univ of Delaware	133	11	10	8	4	37	7		1	7	10	5	12	6	14	1
DISTRICT OF COLUMBIA	435	8	17	2	10	50	43	7		45	62	13	5	65	61	47
American Univ	44	1	3		2					7	14	4		2	9	2
Catholic Univ of America	98	4	5			7	2	6		16	6	1	2	24	9	16
Gallaudet Univ	4														4	
George Washington Univ	149			2	8	38	12			11	17	2	2	6	39	12
Georgetown Univ	73	1	4				21			1	9	4		32		1
Howard Univ	67	2	5			5	8	1		10	16	2	1	1		16

NOTE: Field groupings may differ from those in reports published by federal sponsors of the Survey of Earned Doctorates. See inside the back cover for a description of fields as reported in this table. Refer also to the explanatory note about this table in front of Appendix A.

*Includes the 50 states, the District of Columbia, and Puerto Rico.

†Doctorates from this university were awarded jointly with San Diego State University.

	1991 Total	Physics and Astronomy	Chemistry	Earth, Atmos., and Marine Sci.	Math and Computer Sci.	Engineering	Biosciences	Health Sciences	Agricultural Sciences	Psychology	Other Social Sciences	History	Eng. and Amer. Lang. and Lit.	Other Humanities	Education	Professional/ Other Fields
FLORIDA	1115	16	48	22	47	122	97	21	40	98	67	3	25	51	368	90
Barry Univ	3															3
Florida Atlantic Univ	18					3				2					13	
Florida Inst of Technology	16			1		7	1			2					4	1
Florida International Univ	14									2					11	1
Florida State Univ	257	3	7	8	13	2	16	6		19	33	1	6	36	67	40
Nova Univ	228				15					12					172	29
Univ of Central Florida	20				1	8									11	
Univ of Florida	368	9	34	4	11	82	49	10	40	27	29	2	7	7	42	15
Univ of Miami	112	3	4	7	2	10	21	5		21	5		8	8	17	1
Univ of South Florida	79	1	3	2	5	10	10			13			4		31	
GEORGIA	792	18	35	8	18	102	116	6	32	87	37	13	18	46	185	71
Clark Atlanta Univ	49						3			11	4	2	3		21	5
Emory Univ	112		14		2		31			9	5	6	7	29	3	6
Georgia Inst of Technology	153	11	8	5	13	100	6			6						4
Georgia State Univ	132	4	1				7	2		32	7	1	3	1	48	26
Inst of Paper Sci & Tech	2					2										
Medical College of Georgia	12						10	2								
Univ of Georgia	332	3	12	3	3		59	2	32	29	21	4	5	16	113	30
HAWAII	143	4	2	8	3	2	27	9	8	8	31	5		22	13	1
Univ of Hawaii at Manoa	143	4	2	8	3	2	27	9	8	8	31	5		22	13	1
IDAHO	76		4	4	1	10	11		11		3	1	2		29	
Idaho State Univ	16				1		6				3		2		4	
Univ of Idaho	60		4	4		10	5		11			1			25	
ILLINOIS	2129	90	119	30	120	313	261	60	55	174	177	42	44	176	334	134
DePaul Univ	17									16				1		
Illinois Inst of Technology	81	3	2		20	32	3			16						5
Illinois State Univ-Normal	39				1		9					2	3	2	22	
Loyola Univ of Chicago	97		4				12	1		24	4	3	1	6	41	1
Lutheran Sch of Theol-Chicago	6															6
Northern Illinois Univ	107		11	1	1		3			6	8		5		72	
Northwestern Univ	316	7	13	6	18	90	42	8		27	27	5	3	35	15	20
Rush Univ	23						9	14								
Southern Ill Univ-Carbondale	162	2	2	3	3	4	13	4	2	17	12	2	5	12	58	23
Southern Ill Univ-Edwardsville	9														9	
Univ of Chicago	317	22	23	7	16		41	2		16	68	17	13	52	11	29
U of Health Sci-Chicago Med	17						5			12						
U of Ill-Chicago	200	9	13	2	11	38	41	23		11	20	4	6	5	12	5
U of Ill-Urbana/Champaign	738	47	51	11	50	149	83	8	53	29	38	9	8	63	94	45
INDIANA	993	34	82	13	41	153	104	31	32	65	71	22	43	105	134	63
Ball State Univ	64									19		2	9	8	26	
Grace Theological Seminary	3															3
Indiana State Univ	26						4			10					12	
Indiana Univ-Bloomington	360	16	24	6	5		34	5		14	39	13	16	85	60	43
Indiana Univ Sch of Medicine	9							9								
Purdue Univ	430	9	42	7	28	128	56	17	32	15	24	4	11	7	36	14
Univ of Notre Dame	101	9	16		8	25	10			7	8	3	7	5		3
IOWA	674	25	71	10	39	91	77	27	32	15	35	8	15	41	149	39
Drake Univ	7														7	
Iowa State Univ	297	16	53	6	21	44	36	3	32	8	21	2			53	2
Univ of Northern Iowa	11					2									7	2
Univ of Iowa	359	9	18	4	18	45	41	24		7	14	6	15	41	82	35
KANSAS	371	7	22	2	12	36	49	17	29	35	13	5	5	33	93	13
Kansas State Univ	136	5	7		8	13	16	2	29	2	2				49	3
Univ of Kansas	222	2	13	2	4	16	32	12		33	11	5	5	33	44	10
Wichita State Univ	13		2			7	1	3								
KENTUCKY	264	2	9	2	7	19	42	3	23	22	22	2	7	19	41	44
Southern Bapt Theol Seminary	40									1	1			8	6	24
Univ of Kentucky	182	2	7	2	6	16	29	3	23	14	21	2	7	8	22	20
Univ of Louisville	42		2		1	3	13			7				3	13	
LOUISIANA	417	7	32	6	40	31	61	29	22	29	22	8	20	31	35	44
Grambling St Univ	2														2	
Louisiana St U & A&M College	192	7	19	6	11	20	22	8	22	14	13	3	6	13	14	14
Louisiana St U Med-New Orleans	18						13	5								
Louisiana St U Med-Shreveport	7						7									
Louisiana Tech Univ	10					3										7
New Orleans Bapt Theol Seminary	29													9	4	16
Northeast Louisiana Univ	6		1				2	3								
Northwestern St Univ of LA	4														4	
Tulane Univ of Louisiana	91		5		10	5	16	13		12	7	5	4	8		6
Univ of New Orleans	23		7							3	2				11	
U of Southwestern Louisiana	35				19	3	1						10	1		1

APPENDIX TABLE A-7 (Continued)

	1991 Total	Physics and Astronomy	Chemistry	Earth, Atmos., and Marine Sci.	Math and Computer Sci.	Engineering	Biosciences	Health Sciences	Agricultural Sciences	Psychology	Other Social Sciences	History	Eng. and Amer. Lang. and Lit.	Other Humanities	Education	Professional/ Other Fields
MAINE	32	2	3			6	7		3	7					3	1
Univ of Maine	32	2	3			6	7		3	7					3	1
MARYLAND	836	49	32	13	56	99	156	59	14	52	77	18	14	55	106	36
Johns Hopkins Univ	285	15	9	6	12	40	75	42		7	32	14	5	15	13	
Morgan State Univ	4														4	
Peabody Inst of Johns Hopkins	10													10		
Uniformed Serv U of Hlth Sci	14						12			2						
U of Maryland-Baltimore County	27				5	2	6			7	4			1		2
U of Maryland-College Park	453	34	20	7	39	57	42	5	14	36	41	4	9	29	89	27
U of Maryland Sch of Med	43		3				21	12								7
MASSACHUSETTS	2123	138	133	44	115	327	267	56	13	89	249	53	30	159	340	110
American Internatl College	3														3	
Boston College	80	7	5				3	5		11	11	1	1	4	29	3
Boston Univ	255	15	5	2	10	7	51	16		24	28	4	3	22	58	10
Brandeis Univ	91	4	7		8		16			4	21	7	7	10		7
Clark Univ	31	2	6				3			7	10				3	
Harvard Univ	534	32	24	7	28	2	88	15		13	85	35	8	67	101	29
Mass Coll of Pharm & Health Sci	7							7								
Mass Inst of Technology	497	47	39	28	36	225	38	2		3	42			12		25
Northeastern Univ	65	6	7		6	18	7	4		3	11				3	
Simmons College	7															7
Smith College	17															17
Springfield College	4														4	
Tufts Univ	66	4	9		1	6	21			5	13		4	3		
Univ of Mass-Amherst	400	11	23	6	26	46	27	5	13	19	28	6	7	41	130	12
Univ of Mass-Boston	1			1												
Univ of Mass-Lowell	35	8	8			6	4								9	
U Mass-Med School-Worcester	9						7	2								
Worcester Polytechnic Inst	21	2				17	2									
MICHIGAN	1368	46	86	16	61	223	154	48	53	116	105	26	25	88	231	90
Andrews Univ	12													4	6	2
Michigan State Univ	390	14	27	2	13	28	54	2	45	30	36	7	4	21	75	32
Michigan Technological Univ	27	5	5	1		14	2									
Oakland Univ	9	2				3	2								2	
Univ of Detroit Mercy	10		1			2				7						
Univ of Michigan	659	25	37	13	31	160	68	35	8	37	58	19	18	58	39	53
Wayne State Univ	202		16		8	16	27	11		29	7		3	5	79	1
Western Michigan Univ	59				9		1			13	4				30	2
MINNESOTA	795	16	36	9	48	86	83	42	75	60	80	11	8	44	128	69
Luther Northwestern Theol Sem	4															4
Mayo Graduate School	9						8	1								
Univ of Minnesota-Minneapolis	704	16	36	9	48	86	75	33	75	58	67	11	8	44	96	42
Univ of St. Thomas	17														17	
Walden Univ	61							8		2	13				15	23
MISSISSIPPI	329	1	24		2	15	14	12	25	48	6	3	6	2	137	34
Delta State Univ	5														5	
Jackson State Univ	4														4	
Mississippi State Univ	104		1		1	10	7	2	25	3	3	3			31	18
Univ of Mississippi	105	1	9		1	4	1	6		18	3		3	1	45	13
U of Mississippi-Med Center	4						4									
Univ of Southern Mississippi	107		14			1	2	4		27			3	1	52	3
MISSOURI	620	21	30	15	23	81	71	7	22	82	38	5	14	27	115	69
Concordia Seminary	6															6
Midwest Bapt Theol Seminary	11													1		10
St. Louis Univ	112			5	2		13	3		14	8		3	4	28	32
U of Missouri-Columbia	212	6	6	3	5	14	20	1	22	31	16	4	9	5	56	14
U of Missouri-Kansas City	50		3		1		3	3		19				7	14	
U of Missouri-Rolla	63	6	7	1	3	46										
U of Missouri-St. Louis	28		4							10					14	
Washington University	138	9	10	6	12	21	35			8	14	1	2	10	3	7
MONTANA	56	5	7	1		5	11		3	9	2				13	
Montana State Univ	34	5	7	1		5	6								10	
Univ of Montana	22						5		3	9	2				3	
NEBRASKA	219	2	3	2	8	6	23	5	30	18	8		9	12	65	28
Creighton Univ	4						3	1								
Univ of Nebraska-Lincoln	215	2	3	2	8	6	20	4	30	18	8		9	12	65	28
NEVADA	37	1	5	9		3	6			8			1		4	
Univ of Nevada-Las Vegas	2														2	
Univ of Nevada-Reno	35	1	5	9		3	6			8			1		2	
NEW HAMPSHIRE	76	3	8	3	1	13	23		2	8	5	3	2	1	4	
Dartmouth College	37	2	7	3		8	16			1						
Univ of New Hampshire	39	1	1		1	5	7		2	7	5	3	2	1	4	

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	1991 Total	Physics and Astronomy	Chemistry	Earth, Atmos., and Marine Sci.	Math and Computer Sci.	Engineering	Biosciences	Health Sciences	Agricultural Sciences	Psychology	Other Social Sciences	History	Eng. and Amer. Lang. and Lit.	Other Humanities	Education	Professional/ Other Fields
NEW JERSEY	709	31	37	23	45	134	80	2	19	46	74	32	17	69	59	41
Drew Univ	21										1	1	2	5		12
Fairleigh Dickinson Univ	17									17						
New Jersey Inst of Technology	10					10										
Princeton Theol Seminary	15													5		10
Princeton Univ	244	23	10	15	21	42	19			7	39	21	9	36		2
Rutgers St U-New Brunswick	304	4	13	8	15	58	47	2	19	10	27	10	6	23	48	14
Rutgers St U-Newark	19		3				5			2	6					3
Seton Hall Univ	25		7							7					11	
Stevens Inst of Technology	45	4	4		9	24				3	1					
U of Med & Dent of NJ	9						9									
NEW MEXICO	230	14	18	12	14	28	25	2	11	24	8	1	5	9	54	5
New Mexico Inst of Mining & Tech	16	1	1	7	1	6										
New Mexico State Univ	63	3	8	1	6	5	8		11	8					12	1
Univ of New Mexico	151	10	9	4	7	17	17	2		16	8	1	5	9	42	4
NEW YORK	3740	157	187	48	189	470	477	87	59	392	342	85	127	367	536	217
Adelphi Univ	39				1			12		21						5
Alfred Univ	15					15										
City U of NY-Grad Sch/U Ctr	326	15	28	1	20	25	37	8		52	47	7	14	44	2	26
Clarkson Univ	35	2	5		2	23	3									
Columbia Univ	398	22	13	14	20	56	34	16		32	44	24	19	61	8	35
Columbia U-Teachers College	232														232	
Cornell Univ	500	41	20	6	26	109	78	5	51	12	63	11	9	32	19	18
Cornell Univ Medical College	31						31									
Fordham Univ	111						1			22	11	2	6	6	46	17
Hofstra Univ	64									41					23	
Jewish Theol Sem of America	4											1		2		1
The Juilliard School	14													14		
Long Island U-Brooklyn Campus	11			1						10						
Manhattan School of Music	8													8		
New School for Social Research	38									20	16			2		
New York Medical College	12						12									
New York Univ	427	9	10	1	37	1	31	25		44	36	14	17	83	75	44
Pace Univ	3															3
Polytechnic Univ	60	1	14		11	34										
Rensselaer Polytechnic Inst	136	9	12	5	10	79	4				6			5		6
Rockefeller Univ	27	2					25									
St. John's Univ	38						2	3		22			2	1	8	
State Univ of NY-Albany	111	3	3	3	3		8	1		20	18		7	7	28	10
State Univ of NY-Binghamton	67		6	1	4	4	3			10	14	7	9	7		2
State Univ of NY-Buffalo	272	5	25	1	12	49	38	5		29	22	4	13	16	39	14
SUNY Coll-Envirn Sci & Forestry	20		1	3		1	6	1	8							
SUNY College of Optometry	2							2								
SUNY-Hlth Sci Ctr-Brooklyn	23						23									
SUNY-Hlth Sci Ctr-Syracuse	4						4									
State Univ of NY-Stony Brook	246	21	24	8	20	16	52	3		16	24	4	20	36	2	
Syracuse Univ	195	7	8	1	9	40	11	2		12	24	4	4	14	41	18
Union Theological Seminary	9															9
Union U-Albany Med College	14						14									
Univ of Rochester	194	20	18	3	14	18	30	4		14	17	5	7	28	12	4
Yeshiva Univ	24									15		2		1	1	5
Yeshiva U-Einstein Coll of Med	30						30									
NORTH CAROLINA	899	23	63	15	50	129	163	37	46	49	67	12	32	44	137	32
Duke Univ	204	7	14	4	19	30	43		2	8	26	4	11	25		11
East Carolina U-Sch of Med	7						7									
North Carolina St U-Raleigh	256	6	13	3	13	95	33	1	44	7	13				28	
U of N Carolina-Chapel Hill	336	10	36	8	18	4	61	35		26	26	8	19	19	46	20
U of N Carolina-Greensboro	80						3	1		8	2		2		63	1
Wake Forest Univ	16						16									
NORTH DAKOTA	63		6		3	3	12		9	10		1	4		15	
North Dakota State Univ	29		5		3	3	9		9							
Univ of North Dakota	34		1				3			10		1	4		15	
OHIO	1592	46	134	11	65	231	205	41	27	141	88	25	40	90	324	124
Air Force Inst of Technology	6				1	5										
Bowling Green State Univ	65				5		5			10	4	1	10	10	14	6
Case Western Reserve Univ	174	10	19		7	55	27	11		9	9		2	5	3	17
Cleveland State Univ	11		7				2								2	
Hebrew Union College	2											1		1		
Kent State Univ	114	5	1	2	4	1	8	3		24	5	3	7	4	30	17
Medical College of Ohio	15						14	1								
Miami Univ	66		8	3			13			15		4		1	22	
Ohio State Univ	639	17	39	4	42	82	85	15	27	32	53	6	12	33	139	53
Ohio Univ	103	4	2		1	5	10			10		4	6	11	33	17
Univ of Akron	100	2	28			14	5			14	8				26	3
Univ of Cincinnati	226	6	28	2	5	51	27	10		16	9	6	1	25	29	11
Univ of Dayton	6					5	1									
Univ of Toledo	57	2	2			13		1		11			2		26	
Wright State Univ	8						8									

APPENDIX TABLE A-7 (Continued)

	1991 Total	Physics and Astronomy	Chemistry	Earth, Atmos., and Marine Sci.	Math and Computer Sci.	Engineering	Biosciences	Health Sciences	Agricultural Sciences	Psychology	Other Social Sciences	History	Eng. and Amer. Lang. and Lit.	Other Humanities	Education	Professional/ Other Fields
OKLAHOMA	378	5	14	10	9	60	30	4	17	38	15	6	8	14	126	22
Oklahoma State Univ	206	3	7	1	2	26	12	1	17	24	8	3	2	1	87	12
Univ of Oklahoma	145	2	7	9	7	24	18	3		10	7	2	4	12	30	10
Univ of Tulsa	27					10				4		1	2	1	9	
OREGON	414	11	29	18	13	36	51	10	42	22	26	2	6	17	110	21
Oregon Graduate Inst of Sci & Tech	14	2	2	2	2	5	1									
Oregon Health Sciences Univ	15						10	5								
Oregon State Univ	169	1	14	14	7	29	21	4	42	1	3				32	1
Portland State Univ	20	1	3	1		2	1				5				6	1
Univ of Oregon	196	7	10	1	4		18	1		21	18	2	6	17	72	19
PENNSYLVANIA	1971	70	104	42	104	340	183	51	18	140	189	38	41	148	338	165
Annenberg Research Inst	5										1			3		1
Bryn Mawr College	33	2	1	1						7	2	1	1	12		6
Carnegie-Mellon Univ	175	10	6		31	70	8			6	12	8	1	7	1	15
Drexel Univ	55		4	7	1	34	3									6
Duquesne Univ	18						1			8			1	5		3
Hahnemann Univ	4						2	1		1						
Indiana Univ of Pennsylvania	26												9	3	14	
Lehigh Univ	101	7	7	1	5	49	5			7	2		1		14	3
Med College of Pensylvania	9						9									
Pennsylvania State Univ	473	21	38	28	26	105	38	2	18	31	40	1	5	20	82	18
Phila Coll of Pharm & Sci	8		1				1	5								1
Temple Univ	252	8	3		10		20	2		40	16	10	5	18	105	15
Thomas Jefferson Univ	10						10									
Univ of Pennsylvania	449	18	16	3	22	52	56	14		14	86	15	10	59	31	53
Univ of Pittsburgh	341	4	26	2	9	30	30	22		26	30	3	8	21	89	41
Villanova Univ	2		2													
Westminster Theol Seminary	3															3
Widener Univ	7							5							2	
PUERTO RICO	38		5				2			10				7	11	3
Caribbean Ctr for Adv Studies	6									6						
Inter Amer U PR-Metro Campus	9														9	
Univ of Puerto Rico	23		5				2			4				7	2	3
RHODE ISLAND	268	13	19	25	30	26	40	4	6	18	23	8	18	37		1
Brown Univ	173	11	11	10	27	9	23	1		4	22	7	12	36		
Providence College	1											1				
Univ of Rhode Island	94	2	8	15	3	17	17	3	6	14	1		6	1		1
SOUTH CAROLINA	353	3	35	22	10	40	51	21	7	13	14		10	9	93	25
Clemson Univ	73		12	1	2	28	6	1	7		2				7	7
Medical Univ of South Carolina	18		3				14	1								
South Carolina State College	16														16	
Univ of South Carolina	246	3	20	21	8	12	31	19		13	12		10	9	70	18
SOUTH DAKOTA	47			1		6	6		6	7					21	
S Dakota Sch of Mines & Tech	7			1		6										
South Dakota State Univ	7						1		6							
Univ of South Dakota	33						5			7					21	
TENNESSEE	575	14	24	2	15	66	82	7	10	76	28	10	19	24	155	43
East Tennessee State Univ	11						6								5	
Geo Peabody Coll for Teachers	66									4					62	
Meharry Medical College	3						3									
Memphis State Univ	80		1		2	1	3	5		19		3		4	35	7
Mid-America Bapt Theol Sem	12													3		9
Middle Tennessee State Univ	16		2								3		1		9	1
Tennessee Technological Univ	4					4										
U of Tenn-Ctr for Health Sci	12		1				11									
Univ of Tennessee-Knoxville	216	7	13	2	4	38	27	1	10	23	17	4	13	2	32	23
Vanderbilt Univ	155	7	7		9	23	32	1		30	8	3	5	15	12	3
TEXAS	2330	83	121	67	105	377	244	97	83	170	114	20	35	144	441	229
Baylor College of Medicine	28						28									
Baylor Univ	24	1	4										1	4	10	4
Dallas Theological Seminary	8													2		6
East Texas State Univ	51									3					48	
Lamar Univ	1					1										
Rice Univ	104	6	11	5	16	33	2			5	6	2	7	10		1
Sam Houston State Univ	7										7					
Southern Methodist Univ	49			6	9	28	1				5					
Southwestern Bapt Theol Sem	74											1		16	13	44
Stephen F Austin St Univ	5								5							
Texas A&I Univ	6														6	
Texas A&M Univ	445	6	39	22	10	101	53	3	70	19	20	1	3		74	24
Texas Christian Univ	17	1	2							6		2	4	2		
Texas Southern Univ	12														12	
Texas Tech Univ	144	4	6	6	5	18	8		6	24	3	5	2	14	24	19
Texas Woman's Univ	88						4	26	1	15	6		2		25	9
Univ of Dallas	3									1	1			1		
Univ of Houston	147	9	10	4	5	21	9			24	5	4	4		39	13

NOTE: Field groupings may differ from those in reports published by federal sponsors of the Survey of Earned Doctorates. See inside the back cover for a description of fields as reported in this table. Refer also to the explanatory note about this table in front of Appendix A.

	1991 Total	Physics and Astronomy	Chemistry	Earth, Atmos., and Marine Sci.	Math and Computer Sci.	Engineering	Biosciences	Health Sciences	Agricultural Sciences	Psychology	Other Social Sciences	History	Eng. and Amer. Lang. and Lit.	Other Humanities	Education	Professional/ Other Fields
TEXAS (continued)																
Univ of North Texas	171	2	6		6	1	9		1	21	7	1	2	12	76	27
Univ of Texas-Arlington	68	3	5		6	27	1			2	2		1	5		16
Univ of Texas-Austin	710	42	35	17	38	143	50	44		40	44	4	9	73	114	57
Univ of Texas-Dallas	57	8	3	5	10	1	5			4	8			4		9
Univ of Texas-El Paso	2			2												
U Tex-Hlth Sci Ctr-Houston	56	1					31	24								
U Tex-Hlth Sci Ctr-San Antonio	5						5									
U Tex-Med Branch-Galveston	19						18							1		
U Tex-Southwestern Med Ctr	29					3	20			6						
UTAH	353	7	33	9	13	59	30	10	25	41	29	2	7	10	59	19
Brigham Young Univ	94	2	10			6	5		3	20	6	2		4	36	
Univ of Utah	199	5	23	8	13	46	19	10		12	18		7	6	14	18
Utah State Univ	60			1		7	6		22	9	5				9	1
VERMONT	51		5			7	20		1	8				3	7	
Middlebury College	3													3		
Univ of Vermont	48		5			7	20		1	8					7	
VIRGINIA	833	21	39	21	49	148	99	23	35	65	54	13	21	19	170	56
College of William & Mary	38	6		5			1					2			24	
George Mason Univ	35				6		1	2		7	8				8	3
Old Dominion Univ	35	1		3	5	9	6			5	2					4
Union Theological Seminary	4													2		2
Univ of Virginia	292	9	15	4	21	35	30	8		27	26	11	21	17	67	1
Virginia Commonwealth Univ	93	1	11		2		38	7		16	2				4	12
Virginia Polytech Inst & St U	336	4	13	9	15	104	23	6	35	10	16				67	34
WASHINGTON	657	23	41	37	31	96	95	29	48	32	39	12	17	50	74	33
Gonzaga Univ	8														8	
Seattle Univ	18														18	
Univ of Washington	459	18	38	31	25	73	67	25	17	16	25	10	15	46	25	28
Washington State Univ	172	5	3	6	6	23	28	4	31	16	14	2	2	4	23	5
WEST VIRGINIA	115		3	1		23	13		10	10	6	3	2	1	43	
West Virginia Univ	115		3	1		23	13		10	10	6	3	2	1	43	
WISCONSIN	866	38	42	17	50	117	124	29	54	41	90	21	16	60	101	66
Marquette Univ	61		7		1	9	4			4		2	2	11	14	7
Medical College of Wisconsin	12	1					11									
Univ of Wisconsin-Madison	706	34	33	16	44	94	106	23	54	26	70	19	7	46	79	55
Univ of Wisconsin-Milwaukee	87	3	2	1	5	14	3	6		11	20		7	3	8	4
WYOMING	67		7	6	9	5	11		6	5	1				16	1
Univ of Wyoming	67		7	6	9	5	11		6	5	1				16	1

Top 40 Doctorate-Granting Institutions, 1991

1.	Univ of California-Berkeley	778
2.	Univ of Illinois-Urbana/Champaign	738
3.	Univ of Texas-Austin	710
4.	Univ of Wisconsin-Madison	706
5.	Univ of Minnesota-Minneapolis	704
6.	Univ of Michigan	659
7.	Ohio State Univ	639
8.	Univ of California-Los Angeles	572
9.	Stanford Univ	556
10.	Harvard Univ	534
11.	Cornell Univ	500
12.	Massachusetts Inst of Technology	497
13.	Pennsylvania State Univ	473
14.	Univ of Washington	459
15.	Univ of Maryland-College Park	453
16.	Univ of Pennsylvania	449
17.	Texas A&M Univ	445
18.	Purdue Univ	430
19.	New York Univ	427
20.	Univ of Southern California	422
21.	Univ of Massachusetts-Amherst	400
22.	Columbia Univ	398
23.	Michigan State Univ	390
24.	Univ of Arizona	384
25.	Univ of Florida	368
26.	Indiana Univ-Bloomington	360
27.	Univ of Iowa	359
28.	Univ of California-Davis	347
29.	Yale Univ	344
30.	Univ of Pittsburgh	341
31.	Virginia Polytech Inst & State Univ	336
32.	Univ of North Carolina-Chapel Hill	336
33.	Univ of Georgia	332
34.	City Univ of New York-Grad School	326
35.	Univ of Chicago	317
36.	Northwestern Univ	316
37.	Rutgers State Univ-New Brunswick	304
38.	Univ of Colorado	298
39.	Iowa State Univ	297
40.	Univ of Virginia	292

SOURCE: National Research Council, Survey of Earned Doctorates.

APPENDIX B: Trend Tables, 1981-1991

Appendix B includes the following five tables:

B-1 Number of Doctorate Recipients, by Subfield, 1981-1991
B-2 Number of Doctorate Recipients, by Gender, Race/Ethnicity, and Citizenship, 1976 and 1981-1991
B-3 Broad Field Selection of U.S. Male Ph.D.s, by Race/Ethnicity for Selected Years, 1976-1991
B-4 Major Field Selection of U.S. Male Ph.D.s, by Race/Ethnicity, 1991 (in percent)
B-5 Doctorate-Granting Institutions of U.S. Male Ph.D.s, by Race/Ethnicity of Recipient and Carnegie Classification of Institution for Selected Years, 1976-1991 (in percent)

*** IMPORTANT NOTICE ***

Because of recent increases in the survey response rate, data on citizenship and race/ethnicity for 1990 and 1991 are not comparable to data for earlier years. During the 1980s, response to the Survey of Earned Doctorates fell from 96.2 percent to 91.4 percent. (Note: These rates represent the proportion of questionnaires completed by doctorate recipients; forms completed by either the doctoral institution or NRC staff are not included in the overall response rate because they contain minimal information.) The downward trend was reversed in 1990 when response rose nearly two percentage points above the 1989 rate. It increased yet another point in 1991, reaching 94.3 percent.

Item response rates showed a parallel improvement—a natural consequence of the increase in the overall survey response but also partially because of questionnaire revisions and follow-ups for missing pieces of information. New follow-up procedures instituted in 1990 had an especially strong impact on citizenship and racial/ethnic data for that year. However, since responses to the follow-ups were not received until *after* closure of the 1990 survey, they were not included in the data presented in *Summary Report 1990*. The updated 1990 numbers reflecting follow-up responses are shown in Appendix Table B-2 (page 98) in this year's report. The most significant adjustment was to the numbers of black Ph.D.s—an increase of 8.3 percent among those who were U.S. citizens and 4.7 percent among temporary residents. The data for 1991 will likewise be subject to some revision over the next year, and any adjustments will be presented in next year's report. Readers should keep in mind that fluctuations in response rates affect numerical trends and that 1990 and 1991 data on citizenship and race/ethnicity, in particular, are not comparable to earlier data.

TABLE B-1: Table B-1 presents data for the most recent decade by subfield of doctorate. In general, the subfields correspond to the fields on the questionnaire's Specialties List located at the back of this report; some, however, do not appear on the current Specialties List because they are no longer included in the survey taxonomy. Field groupings may differ from those in reports published by federal sponsors of the Survey of Earned Doctorates (SED); see inside the back cover for a description of field groupings as reported in these tables. The "general" field categories—e.g., "chemistry, general"—include individuals who either received the doctorate in the general subject area or did not indicate a particular specialty field. The "other" field categories—e.g., "chemistry, other"—include individuals whose specified doctoral discipline was not among the specialty fields.

The seven tables in Appendix A present additional information on the most recent cohort of Ph.D.s by field of doctorate.

TABLE B-2: Table B-2 displays data on the race/ethnicity of doctorate recipients for 1976 and the last decade by gender and citizenship. (1976 is included because it serves as the earliest year of comparison for racial/ethnic data presented in the body of the report.) Table B-2 contains three panels, each displayed on a separate page. The first panel includes all doctorates; the others disaggregate the data by gender.

Because of late questionnaire returns and responses to follow-ups for missing information, data are subject to revision in the year after survey closure. The reader should note that numbers in Table B-2 have been revised since publication of Summary Report 1990. New follow-up procedures instituted in 1990 resulted in significant adjustment to the racial/ethnic data for that year. The greatest change was in the number of black Ph.D.s—an increase of 8.3 percent among those who were U.S. citizens and 4.7 percent among temporary residents. Table B-2 in this year's report displays the updated numbers for 1990. See the shaded box on page 91 for additional information on recent increases in response rates and their impact on time-series data.

The racial/ethnic question has undergone several revisions over the years. In 1977, it was modified to correspond to a standard question format recommended by the Federal Interagency Committee on Education and adopted by the Office of Management and Budget (OMB) for use in federally sponsored surveys; an explanation of the effect of these changes is detailed on page 13 of *Summary Report 1977.* (Note: Changes in the OMB guidelines prompted the moving of persons having origins in the Indian subcontinent from the white category to the Asian category.) In 1980, the item was further revised in two ways: (1) the Hispanic category was subdivided into Puerto Rican, Mexican American, and "other" Hispanic to provide more detail for users of the racial/ethnic data, and (2) respondents were asked to check only one racial category. (Before 1980, doctorate recipients could check more than one category to indicate their race. However, when the data were compiled, all persons who checked American Indian, Asian, or Hispanic and also checked white were included in the minority group category. Those who checked black and any other category were designated as black.) The item was modified again in 1982 to separate the questions on race and ethnicity. Since then, respondents have been asked to first check one of the four racial group categories (American Indian, Asian, black, or white) and to then indicate whether or not they are Hispanic. In this table, Ph.D.s who reported Hispanic heritage, regardless of their racial designation, are included in one of three Hispanic groups: Puerto Rican, Mexican American, or Other Hispanic. The remaining survey respondents are then counted in the respective racial groups. (Note: Doctorate recipients who checked the category "American Indian or Alaskan Native" are identified as Native American in this report.)

Tables A-2 and A-4 in Appendix A present additional information on the most recent cohort of Ph.D.s by race/ethnicity.

TABLE B-3: Table B-3 shows the broad field selection of U.S. male Ph.D.s, by race/ethnicity of recipient, for the years 1976, 1981, 1986, 1991. (Table S-2 on page 44 provides comparable data on U.S. women.) Data are also included for those recipients whose race/ethnicity is unknown. This group constituted 4.3 percent of all U.S. male Ph.D.s in 1976, 4.6 percent in 1981, 2.2 percent in 1986, and 1.7 percent in 1991. ***Refer to the explanatory note on Table B-2 for a detailed description of the racial/ethnic variable; see the shaded box on page 91 for important information on recent increases in response rates and their impact on time-series data.***

TABLE B-4: Table B-4 further disaggregates the field data presented in Table B-3; only U.S. men who earned doctorates in 1991 are included. (Table S-3 on page 45 displays comparable data on U.S. women.) Because the special section of this report focuses on female Ph.D.s, the subfields displayed in Table B-4 are those in which women tend to concentrate. The same fields are included in both Table B-4 and Table S-3 for comparative purposes. Thus, many of the fields in which men are likely to specialize are not shown (e.g., subfields within physical sciences and engineering).

Percentages in this table are based on the total number of U.S. male Ph.D.s in each racial/ethnic group. Data are also included for those recipients whose race/ethnicity is unknown (1.7 percent of all U.S. male Ph.D.s in 1991). ***Refer to the explanatory note on Table B-2 for a detailed description of the racial/ethnic variable; see the shaded box on page 91 for important information on recent increases in response rates and their impact on time-series data.***

TABLE B-5: Table B-5 displays data on the doctorate-granting institutions of U.S. men by race/ethnicity of recipient, for the years 1976, 1981, 1986, and 1991. (Table S-4 on page 46 presents comparable data on U.S. women.) The institutions are grouped by Carnegie Classifications (see explanation beginning on page 33 of the special section). Percentages are based on the number of U.S. men in each racial/ethnic group whose doctoral institutions were assigned Carnegie Classifications in 1987—the case for virtually all Ph.D.s. In 1991, only 24 U.S. men received Ph.D.s from institutions that did not exist in 1987 and, hence, could not be classified. ***Refer to the explanatory note on Table B-2 for a detailed description of the racial/ethnic variable; see the shaded box on page 91 for important information on recent increases in response rates and their impact on time-series data.***

APPENDIX TABLE B-1 Number of Doctorate Recipients, by Subfield, 1981-1991

	Year of Doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TOTAL ALL FIELDS	31357	31111	31282	31337	31297	31895	32363	33489	34318	36057	37451
PHYSICAL SCIENCES	4170	4291	4426	4452	4531	4807	5030	5309	5455	5858	6276
MATHEMATICS	728	720	701	698	688	729	740	749	859	892	1040
Applied Mathematics	118	108	125	108	116	135	131	142	158	185	192
Algebra	56	60	55	65	55	46	57	54	50	39	72
Analysis & Functional Analysis	105	98	76	71	83	81	86	76	103	90	132
Geometry	29	32	44	27	35	38	30	44	47	42	66
Logic	18	17	21	25	30	23	18	20	12	19	23
Number Theory	24	28	19	27	18	20	15	26	23	26	30
Math Probability and Statistics	163	165	151	181	150	141	143	152	167	157	206
Topology	55	45	44	42	35	34	41	27	37	50	57
Topological Algebra	-	-	-	-	-	-	-	-	-	-	-
Computing Theory and Practice	16	11	12	13	15	10	14	12	12	12	19
Operations Research	36	36	20	27	22	29	22	29	22	29	16
Mathematics, General	77	84	86	78	85	125	137	134	177	191	182
Mathematics, Other	31	36	48	34	44	47	46	33	51	52	45
COMPUTER SCIENCE	232	220	286	295	310	399	450	515	612	705	797
Computer Sciences	232	220	264	256	249	355	384	442	519	612	719
Information Sciences and Systems	-	-	22	39	61	44	66	73	93	93	78
PHYSICS AND ASTRONOMY	1015	1014	1043	1080	1080	1187	1237	1302	1274	1392	1408
Astronomy	50	52	50	42	43	52	46	66	49	52	50
Astrophysics	59	50	65	56	57	57	54	64	64	76	75
Acoustics	13	11	14	21	10	15	17	16	15	21	12
Atomic and Molecular	66	96	71	77	58	70	79	77	74	87	76
Electron	-	-	1	2	4	2	6	2	4	2	1
Elementary Particles	119	119	136	138	154	147	159	174	135	163	182
Fluids	14	13	15	11	16	6	21	17	14	17	14
Nuclear Structure	63	53	90	72	86	89	74	88	81	73	66
Optics	54	42	50	53	51	58	50	65	78	76	84
Plasma	65	69	72	73	55	61	72	65	61	42	58
Polymer	-	-	10	8	11	11	15	20	7	11	17
Thermal	7	-	-	-	-	-	-	-	-	-	-
Solid State	253	235	222	258	248	280	287	252	296	306	371
Physics, General	164	167	150	170	176	222	238	271	269	323	247
Physics, Other	88	107	97	99	111	117	119	125	127	143	155
CHEMISTRY	1612	1680	1759	1765	1836	1903	1975	2015	1970	2100	2194
Analytical	229	190	264	228	285	257	314	301	289	293	303
Inorganic	188	226	215	233	251	260	240	250	256	242	259
Nuclear	12	20	13	18	7	18	13	7	6	13	14
Organic	494	519	503	525	494	511	511	531	511	452	537
Pharmaceutical	52	55	78	56	60	58	65	73	64	48	82
Physical	275	324	311	329	304	293	302	318	310	325	363
Polymer	62	50	62	63	84	72	96	81	78	81	111
Theoretical	33	32	48	37	48	41	46	50	46	55	45
Chemistry, General	193	175	177	183	213	289	297	310	312	524	407
Chemistry, Other	74	89	88	93	90	104	91	94	98	67	73
EARTH, ATMOS, & MARINE SCI	583	657	637	614	617	589	628	728	740	769	837
Atmospheric Physics and Chemistry	15	17	21	11	16	21	24	19	15	18	20
Atmospheric Dynamics	27	22	16	25	21	16	17	25	16	20	21
Meteorology	-	-	17	28	23	27	17	35	27	20	31
Atmos and Meteorological Sci, Gen	-	-	16	5	10	7	16	14	14	23	26
Atmos and Meteorological Sci, Other	33	26	27	12	10	7	13	10	15	2	10
Geology	27	25	105	124	111	118	114	144	165	166	191
Geochemistry	48	51	48	43	48	37	31	46	39	56	63
Geophysics and Seismology	72	81	75	68	92	89	75	83	87	91	113
Paleontology	19	24	17	35	23	16	21	24	17	21	24
Mineralogy, Petrology	30	41	24	28	28	17	24	19	36	26	36
Stratigraphy, Sedimentation	42	47	25	16	23	14	22	30	24	25	29
Geomorphology and Glacial Geology	13	21	10	9	13	11	18	9	10	14	18
Applied Geology	21	25	8	7	8	4	5	7	6	6	1
Geological Sciences, General	45	38	15	10	11	12	18	8	19	31	34
Geological Sciences, Other	16	29	21	25	11	12	29	31	28	28	36
Environmental Sciences	54	53	50	45	42	35	29	58	68	50	35
Hydrology and Water Resources	21	24	20	18	17	16	18	24	24	13	16
Oceanography	70	92	87	78	68	78	73	81	87	89	85
Marine Sciences	30	41	22	21	24	22	38	28	26	39	27
Physical Sciences, Other	-	-	13	6	18	30	26	33	17	31	21
ENGINEERING	2528	2646	2781	2913	3166	3376	3712	4188	4544	4893	5212
Aerospace, Aeronautic & Astronautic	97	86	106	119	124	118	142	150	178	192	207
Agricultural	64	48	58	74	60	52	74	70	102	101	84
Bioengineering and Biomedical	64	59	74	70	69	67	75	114	115	129	149
Ceramic	24	20	24	25	19	25	42	30	35	43	58
Chemical	296	306	349	361	440	476	527	624	625	561	620
Civil	287	308	354	351	358	387	441	489	498	505	509
Communications	-	-	25	11	30	23	26	24	25	35	21
Computer	71	72	83	56	55	77	62	100	117	131	178

NOTE: Field groupings may differ from those in reports published by federal sponsors of the Survey of Earned Doctorates. See inside the back cover for a description of fields as reported in this table. Refer also to the explanatory note about this table in front of Appendix B.

	Year of Doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Electrical, Electronics	478	544	517	593	631	706	691	886	995	1110	1206
Engineering Mechanics	78	103	68	91	89	94	113	105	110	111	113
Engineering Physics	22	12	10	8	12	13	13	9	16	16	23
Engineering Science	-	-	30	28	31	30	26	32	27	37	42
Environmental Health Engineering	71	60	43	57	33	42	36	43	41	48	64
Industrial	66	79	86	84	92	101	120	127	162	151	163
Materials Science	113	147	157	168	188	187	238	252	257	307	362
Mechanical	282	334	311	336	424	442	544	610	650	772	761
Metallurgical	97	88	87	78	96	93	112	92	88	90	70
Mining and Mineral	8	7	22	16	16	22	27	17	33	39	38
Naval Architecture, Marine Eng	-	-	4	5	8	9	7	9	9	8	5
Nuclear	130	121	103	120	96	98	84	104	86	114	107
Ocean	-	-	12	11	25	14	24	21	20	17	21
Operations Research	80	58	44	50	54	54	51	44	68	46	76
Petroleum	21	27	22	17	24	18	23	33	29	49	28
Polymer	-	-	21	31	40	37	34	28	58	48	42
Systems Engineering	68	49	57	52	57	33	47	44	30	51	48
Engineering, General	36	29	30	29	26	55	54	49	61	75	78
Engineering, Other	75	89	84	72	69	103	79	82	109	107	139
LIFE SCIENCES	5611	5709	5553	5757	5780	5733	5751	6164	6341	6609	6928
BIOLOGICAL SCIENCES	3804	3893	3741	3880	3793	3807	3839	4112	4115	4331	4642
Biochemistry	645	649	647	606	581	576	573	613	669	678	762
Biophysics	99	91	88	90	69	72	86	97	87	103	99
Bacteriology	-	-	10	12	17	12	13	7	11	15	11
Plant Genetics	-	-	19	20	31	20	26	26	18	31	23
Plant Pathology	-	-	29	30	38	28	33	30	22	37	50
Plant Physiology	68	56	67	70	58	52	62	74	47	51	65
Botany, Other	147	146	116	126	120	121	106	112	117	104	105
Anatomy	156	163	107	103	135	86	92	88	80	70	77
Biometrics & Biostatistics	48	59	45	49	40	30	37	47	46	47	59
Cell Biology	47	41	118	123	100	130	127	118	133	145	150
Ecology	198	173	183	202	200	183	158	155	161	166	190
Developmental Biology/Embryology	20	10	13	15	15	9	6	7	10	22	37
Endocrinology	-	-	28	30	17	17	19	21	21	24	33
Entomology	143	170	141	156	173	170	123	133	139	147	138
Immunology	148	151	154	133	124	146	136	179	152	153	177
Molecular Biology	187	223	225	275	277	298	303	364	413	413	481
Microbiology and Bacteriology	355	324	-	-	-	-	-	-	-	-	-
Microbiology	-	-	309	346	289	326	301	333	340	335	373
Neurosciences	-	117	134	145	156	120	153	163	181	192	239
Nutritional Sciences	99	120	111	109	113	122	141	127	128	118	106
Parasitology	18	14	9	30	21	25	16	20	20	13	20
Toxicology	-	-	60	97	99	104	115	108	111	91	86
Human and Animal Genetics	-	-	95	82	105	91	113	118	112	153	160
Genetics	157	176	-	-	-	-	-	-	-	-	-
Human and Animal Pathology	106	97	97	88	110	91	127	112	105	101	120
Human and Animal Pharmacology	280	280	218	237	235	245	234	252	241	243	262
Human and Animal Physiology	327	309	246	237	245	240	248	225	272	278	272
Zoology, Other	198	199	192	158	147	155	139	167	132	122	126
Biological Sciences, General	204	196	174	190	190	213	229	256	231	337	278
Biological Sciences, Other	154	129	106	121	88	125	123	160	116	142	143
HEALTH SCIENCES	657	686	640	722	729	770	800	882	974	958	1049
Audiology and Speech Pathology	140	129	113	104	99	82	107	93	91	93	90
Environmental Health	44	39	38	40	31	39	29	52	35	38	37
Public Health	4	3	54	53	103	103	96	121	129	123	133
Public Health and Epidemiology	157	159	-	-	-	-	-	-	-	-	-
Epidemiology	-	-	76	103	76	80	86	97	107	102	115
Nursing	89	112	126	161	183	216	218	247	308	262	325
Pharmacy	69	81	81	102	106	104	133	95	111	116	113
Rehabilitation/Therapeutic Services	-	-	-	-	-	-	-	-	-	-	17
Veterinary Medicine	41	41	45	46	51	41	31	48	48	70	56
Health Sciences, General	24	16	20	14	13	27	12	29	19	36	29
Health Sciences, Other	89	106	87	99	67	78	88	100	126	118	134
AGRICULTURAL SCIENCES	1150	1130	1172	1155	1258	1156	1112	1170	1252	1320	1237
Agricultural Business & Mgmt	-	-	-	-	-	-	-	-	2	2	1
Agricultural Economics	168	179	157	158	147	158	136	155	164	144	165
Animal Breeding and Genetics	-	-	25	28	28	25	23	27	23	22	18
Animal Husbandry	19	22	-	-	-	-	-	-	-	-	-
Animal Nutrition	149	133	56	71	78	65	82	54	67	54	57
Dairy Science	-	-	-	-	-	-	-	12	16	20	19
Poultry Science	-	-	-	-	-	-	-	10	11	17	13
Animal Sciences, Other	-	-	92	90	95	91	76	86	95	90	91
Agronomy	177	159	149	137	158	159	143	141	140	143	117
Plant Breeding and Genetics	-	-	71	78	88	78	70	83	64	87	69
Plant Pathology	99	114	92	57	89	85	76	46	63	64	90
Plant Protection-Pest Mgmt	-	-	-	-	-	-	-	1	6	4	2
Plant Sciences, Other	-	-	16	20	21	22	20	23	15	23	17
Food Sciences	104	110	141	113	136	121	131	16	1	-	-
Food Engineering	-	-	-	-	-	-	-	6	11	10	12
Food Sciences, Other	-	-	-	-	-	-	-	119	147	141	137
Soil Chemistry/Microbiology	-	-	-	-	-	-	-	33	28	27	24
Soil Sciences	90	83	85	99	97	103	74	18	-	-	-
Soil Sciences, Other	-	-	-	-	-	-	-	62	75	91	78
Horticulture Science	85	88	72	66	76	60	71	61	75	101	78

APPENDIX TABLE B-1 (Continued)

	Year of Doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Forestry Science	95	78	90	94	105	88	100	15	-	-	-
Forest Biology	-	-	-	-	-	-	-	21	22	27	17
Forest Engineering	-	-	-	-	-	-	-	3	1	2	2
Forest Management	-	-	-	-	-	-	-	18	21	14	22
Wood Science	-	-	-	-	-	-	-	7	16	16	16
Renewable Natural Resources	-	-	-	-	-	-	-	7	12	16	19
Forestry & Related Sci, Other	-	-	-	-	-	-	-	35	57	62	45
Fish and Wildlife	66	65	-	-	-	-	-	-	-	-	-
Fisheries Science	-	-	36	45	36	32	32	42	34	42	39
Wildlife Management	-	-	31	31	38	20	23	3	-	-	-
Wildlife/Range Management	-	-	-	-	-	-	-	36	52	58	59
Agriculture, General	5	5	7	1	5	4	5	9	7	5	3
Agriculture, Other	93	94	52	67	61	45	50	21	27	38	27
SOCIAL SCIENCES (INCL PSYCH)	6142	5837	6096	5930	5765	5892	5789	5772	5956	6082	6127
Anthropology	369	333	373	335	353	381	352	325	325	324	340
Area Studies	20	19	20	23	19	28	17	16	17	22	23
Criminology	35	36	49	41	38	24	29	43	32	42	35
Demography	-	-	26	19	25	15	26	19	22	20	27
Economics	808	737	792	767	785	835	798	826	872	837	853
Econometrics	17	24	21	27	27	25	25	27	26	26	24
Geography	109	106	121	114	120	120	111	129	105	131	108
International Relations	87	77	76	95	78	76	82	77	94	97	88
Political Science and Government	445	459	397	419	406	414	404	392	430	462	434
Public Policy Studies	-	-	69	54	70	81	83	73	79	87	111
Sociology	605	568	525	515	461	491	423	449	436	428	466
Statistics	40	43	47	39	60	65	49	47	69	69	31
Urban Studies	94	93	74	81	75	50	72	86	62	67	89
Social Sciences, General	22	34	17	17	17	36	30	28	26	23	36
Social Sciences, Other	133	149	142	127	114	127	119	171	158	178	222
PSYCHOLOGY	3358	3159	3347	3257	3117	3124	3169	3064	3203	3269	3240
Clinical	1259	1168	1241	1195	1181	1172	1214	1094	1260	1330	1302
Cognitive	-	-	65	77	76	70	80	83	79	76	94
Comparative	11	12	11	13	11	14	9	7	8	8	7
Counseling	351	348	432	464	431	449	486	482	501	466	495
Developmental	201	192	219	207	175	184	200	176	148	159	156
Experimental	283	240	209	169	165	147	146	135	146	143	142
Educational	180	140	154	210	127	106	89	103	105	98	110
Industrial and Organizational	87	83	90	106	102	110	107	118	104	125	142
Personality	49	36	32	25	21	16	25	18	28	20	13
Physiological	102	90	94	73	79	73	69	85	62	46	45
Psychometrics	27	8	10	6	10	11	9	11	6	8	9
Quantitative	-	-	14	17	16	23	13	12	11	15	7
School	133	166	121	89	92	116	93	115	107	82	82
Social	180	179	191	157	167	141	133	140	128	145	147
Psychology, General	279	242	292	267	265	308	339	359	358	368	321
Psychology, Other	216	255	172	182	199	184	157	126	152	180	168
HUMANITIES	3751	3561	3500	3536	3429	3460	3500	3556	3553	3823	4094
History, American	228	271	224	240	176	197	198	209	206	211	250
History, European	166	158	168	150	143	121	121	127	107	151	126
History of Science	26	29	13	24	23	24	25	22	20	26	27
History, General	-	-	58	76	85	83	94	103	85	111	123
History, Other	272	234	153	127	116	138	148	142	120	113	132
Classics	62	60	44	57	44	51	55	56	51	58	55
Comparative Literature	132	118	124	133	133	101	121	139	103	97	150
Linguistics	176	191	164	160	176	189	199	166	188	167	227
Speech, Debate and Rhetoric	38	38	48	41	38	30	37	37	35	38	85
Letters, General	-	-	3	14	13	19	25	16	13	19	17
Letters, Other	-	1	19	31	26	37	39	43	60	52	44
American Studies	87	64	99	76	87	68	75	70	76	72	92
Archeology	28	21	30	31	24	28	31	23	26	22	33
Art History and Criticism	158	138	150	141	137	126	143	134	145	135	125
Music	368	402	391	445	447	476	499	505	522	573	584
Philosophy	277	251	241	215	238	247	233	222	270	243	285
Religion	165	151	177	183	181	182	182	217	215	219	183
Theatre	103	94	108	101	92	88	82	92	79	106	90
LANGUAGE AND LITERATURE	1396	1260	1219	1225	1164	1164	1112	1147	1152	1308	1351
American	145	154	173	190	204	215	190	186	192	229	253
English	675	616	542	543	525	504	478	531	528	567	600
French	167	119	121	108	86	102	103	101	106	123	99
German	88	74	77	80	62	79	77	76	73	78	71
Italian	16	17	22	17	14	15	21	14	20	25	31
Spanish	184	177	161	144	145	122	133	137	134	173	172
Russian	28	24	24	33	28	28	19	13	13	19	25
Slavic	-	-	9	12	10	8	5	5	7	7	14
Chinese	-	-	16	13	14	13	13	12	9	16	19
Japanese	-	-	5	12	13	9	9	6	13	9	7
Hebrew	-	-	11	13	9	11	13	12	10	14	11
Arabic	-	-	8	8	5	9	8	14	6	7	4
Other Languages	93	79	50	52	49	49	43	40	41	41	45
Humanities, General	23	28	17	22	27	23	23	25	19	28	29
Humanities, Other	46	52	50	44	59	68	58	61	61	74	86

NOTE: Field groupings may differ from those in reports published by federal sponsors of the Survey of Earned Doctorates. See inside the back cover for a description of fields as reported in this table. Refer also to the explanatory note about this table in front of Appendix B.

	Year of Doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
EDUCATION	7497	7251	7174	6808	6733	6645	6450	6358	6276	6507	6397
Curriculum and Instruction	815	811	861	869	825	794	762	815	840	837	803
Educational Admin and Supervision	1659	1474	1632	1569	1625	1637	1686	1749	1632	1662	1409
Educational Leadership	-	-	-	-	-	-	-	-	-	-	473
Educational Media	77	76	88	83	101	79	68	67	76	55	73
Educational Measurement & Statistics	90	94	-	-	-	-	-	-	-	-	-
Educational Statistics and Research	-	-	86	105	74	58	73	51	59	59	79
Educational Testing, Eval and Meas	-	-	51	56	44	47	37	55	42	40	31
Educational Psychology	445	454	274	233	388	330	320	323	301	322	321
School Psychology	-	-	88	110	102	92	95	98	85	87	90
Social Foundations	209	214	142	151	135	124	114	122	110	86	108
Special Education	312	347	349	312	270	273	248	257	259	225	226
Student Counseling & Personnel Serv	549	540	506	391	397	315	315	324	264	301	269
Higher Education Research	671	653	635	657	589	612	570	399	373	424	344
Pre-elementary Education	90	78	63	54	65	86	73	83	63	42	86
Elementary Education	180	149	111	97	122	94	105	93	99	110	73
Junior High Education	-	-	1	-	1	-	1	1	-	-	-
Secondary Education	136	104	87	62	68	86	65	67	53	56	40
Adult and Continuing Education	233	257	221	218	207	223	203	229	236	211	208
TEACHING FIELDS	1437	1333	1327	1170	1118	1142	1064	987	968	923	970
Agricultural Education	43	35	47	47	40	39	39	32	35	38	49
Art Education	63	55	58	41	43	43	52	42	39	44	28
Business Education	50	44	62	52	52	50	36	44	40	34	32
English Education	64	67	76	72	68	79	72	57	51	52	58
Foreign Languages Education	29	31	25	25	30	37	37	53	33	31	45
Health Education	-	-	99	93	89	81	91	86	100	95	79
Home Economics Education	25	33	25	26	21	17	17	17	19	10	21
Industrial Arts Education	27	39	19	27	13	20	24	11	17	18	13
Mathematics Education	62	50	62	64	65	72	74	56	69	65	73
Music Education	76	103	112	92	81	94	109	76	97	78	96
Nursing Education	23	25	17	21	21	40	36	34	29	24	18
Physical Education	-	-	235	219	220	210	192	183	176	191	185
Physical Education, Health & Rec	368	351	-	-	-	-	-	-	-	-	-
Reading Education	193	153	169	142	113	134	94	74	95	82	102
Science Education	107	86	78	77	88	65	63	67	48	72	72
Social Science Education	49	29	39	22	24	22	17	23	13	11	19
Speech Education	12	12	2	10	7	5	5	5	1	5	1
Technical Education	-	-	-	-	-	-	-	13	28	15	25
Trade and Industrial Education	213	191	138	117	82	86	68	67	47	18	17
Other Teaching Fields	33	29	64	23	61	48	38	47	31	40	37
Education, General	405	419	349	311	294	354	366	358	414	536	423
Education, Other	189	248	303	360	308	299	285	280	402	531	371
PROFESSIONAL/OTHER FIELDS	1658	1816	1752	1941	1893	1982	2131	2142	2193	2285	2417
BUSINESS AND MANAGEMENT	624	685	750	869	790	902	982	1033	1067	1037	1164
Accounting	-	-	163	164	150	157	161	175	186	172	172
Banking and Finance	-	-	94	123	104	126	156	148	151	134	172
Business Admin and Management	-	-	179	175	174	222	225	265	245	277	204
Business Economics	-	-	25	30	20	28	26	27	27	21	19
Management Information Systems	-	-	-	-	-	-	-	-	-	-	71
Marketing Management and Research	-	-	73	126	94	110	113	126	130	120	134
Business Statistics	-	-	8	7	9	3	8	6	15	10	5
Operations Research	-	-	38	46	45	46	64	50	52	46	58
Organizational Behavior	-	-	53	70	68	57	66	74	95	64	72
Business and Management, General	-	-	35	49	49	56	75	75	57	70	123
Business and Management, Other	624	685	82	79	77	97	88	87	109	123	134
COMMUNICATIONS	240	266	250	255	266	258	309	247	306	323	333
Communications Research	-	-	51	66	55	79	90	72	85	87	72
Journalism	18	18	20	17	22	18	7	21	15	21	7
Mass Communications	-	-	-	-	-	-	-	-	-	-	68
Radio and Television	-	-	27	20	19	13	16	12	29	17	6
Communication Theory	-	-	-	-	-	-	-	-	-	-	25
Communications, General	-	-	60	68	89	75	102	70	79	86	70
Communications, Other	222	248	92	84	81	73	94	72	98	112	85
OTHER PROFESSIONAL FIELDS	759	841	730	802	812	796	778	812	766	858	839
Architecture & Environmental Design	-	-	34	25	36	27	33	31	43	41	67
Home Economics	85	98	79	107	90	88	67	58	55	74	30
Law	28	21	19	24	25	31	29	33	26	34	22
Library and Archival Science	62	83	51	68	71	57	48	57	60	42	53
Public Administration	147	173	113	127	112	88	78	92	97	88	107
Social Work	213	218	190	231	220	235	214	241	206	246	239
Theology	201	214	227	212	240	240	254	251	232	271	275
Professional Fields, General	-	-	-	2	-	-	1	2	-	3	3
Professional Fields, Other	23	34	17	6	18	30	54	47	47	59	43
OTHER FIELDS	35	24	22	15	25	26	62	50	54	67	81

SOURCE: National Research Council, Survey of Earned Doctorates.

APPENDIX TABLE B-2 Number of Doctorate Recipients, by Gender, Race/Ethnicity, and Citizenship, 1976 and 1981-1991

Total All Doctorates

	Year of Doctorate											
	1976	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TOTAL MEN AND WOMEN	32946	31357	31111	31282	31337	31297	31895	32363	33489	34318	36057	37451
U.S. Citizens	27269	25061	24391	24359	24027	23370	23081	22983	23288	23400	24886	24721
Permanent Visas	1494	1281	1228	1275	1224	1324	1432	1578	1623	1626	1695	1814
Temporary Visas	3529	3940	4204	4499	4832	5228	5276	5610	6194	6647	8074	8852
Unknown Citizenship	654	1075	1288	1149	1254	1375	2106	2192	2384	2645	1402	2064
Total Known Race/Ethnicity	30292	29144	29087	29389	29282	29058	28922	29217	30347	30944	33845	34707
U.S. Citizens	26182	24007	23791	23734	23425	22848	22651	22505	22901	23016	24507	24390
Permanent Visas	1288	1257	1190	1249	1194	1291	1357	1509	1546	1564	1634	1760
Temporary Visas	2767	3757	3954	4250	4509	4848	4837	5141	5838	6295	7550	8478
Unknown Citizenship	55	123	152	156	154	71	77	62	62	69	154	79
Native Americans	40	85	77	82	74	96	100	116	94	94	97	130
U.S. Citizens	40	85	77	81	74	96	99	115	94	94	96	128
Permanent Visas*	-	-	-	1	-	-	-	-	-	-	-	2
Temporary Visas*	-	-	-	-	-	-	1	1	-	-	1	-
Unknown Citizenship	-	-	-	-	-	-	-	-	-	-	-	-
Asians	2123	2711	2904	3124	3394	3642	3727	4126	4778	5182	6287	7271
U.S. Citizens	334	465	452	492	512	516	530	542	614	626	640	762
Permanent Visas	641	608	552	551	507	553	528	625	621	635	662	729
Temporary Visas	1131	1564	1829	2006	2295	2526	2645	2933	3516	3904	4929	5739
Unknown Citizenship	17	74	71	75	80	47	24	26	27	17	56	41
Blacks	1307	1491	1526	1382	1494	1440	1270	1218	1263	1246	1348	1355
U.S. Citizens	1095	1013	1047	922	953	912	823	768	814	821	897	933
Permanent Visas	54	97	96	83	102	131	126	139	152	141	149	149
Temporary Visas	155	372	373	363	419	395	313	305	291	273	290	269
Unknown Citizenship	3	9	10	14	20	2	8	6	6	11	12	4
Hispanics	460	931	920	969	918	1000	1055	1055	1051	1064	1226	1280
U.S. Citizens	340	464	535	539	536	561	571	618	597	582	718	708
Permanent Visas	23	62	79	69	71	73	107	91	99	112	117	135
Temporary Visas	93	389	294	342	300	360	372	338	349	364	384	431
Unknown Citizenship	4	16	12	19	11	6	5	8	6	6	7	6
Whites	26362	23926	23660	23832	23402	22880	22770	22702	23161	23358	24887	24671
U.S. Citizens	24373	21980	21680	21700	21350	20763	20628	20462	20782	20893	22156	21859
Permanent Visas	570	490	463	545	514	534	596	654	674	676	706	745
Temporary Visas	1388	1432	1458	1539	1495	1567	1506	1564	1682	1754	1946	2039
Unknown Citizenship	31	24	59	48	43	16	40	22	23	35	79	28
Unknown Race/Ethnicity	2654	2213	2024	1893	2055	2239	2973	3146	3142	3374	2212	2744
U.S. Citizens	1087	1054	600	625	602	522	430	478	387	384	379	331
Permanent Visas	206	24	38	26	30	33	75	69	77	62	61	54
Temporary Visas	762	183	250	249	323	380	439	469	356	352	524	374
Unknown Citizenship	599	952	1136	993	1100	1304	2029	2130	2322	2576	1248	1985

NOTE: The reader is referred to the explanatory note about this table in front of Appendix B.

*In most cases, non-U.S. Native Americans are citizens of Canada or of Latin America.

Doctorates: MEN

	Year of Doctorate											
	1976	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TOTAL MEN	25262	21465	21018	20749	20638	20553	20591	20938	21677	21811	22955	23686
U.S. Citizens	20427	16360	15562	15120	14730	14223	13636	13575	13725	13397	14151	13885
Permanent Visas	1204	973	915	953	892	999	1067	1117	1165	1139	1187	1196
Temporary Visas	3121	3387	3621	3872	4134	4395	4414	4722	5133	5443	6617	7150
Unknown Citizenship	510	745	920	804	882	936	1474	1524	1654	1832	1000	1455
Total Known Race/Ethnicity	23053	19895	19538	19370	19132	18944	18431	18673	19408	19400	21316	21701
U.S. Citizens	19551	15604	15142	14673	14304	13858	13337	13248	13447	13115	13885	13649
Permanent Visas	1035	957	886	931	867	971	1004	1064	1098	1094	1148	1154
Temporary Visas	2424	3226	3396	3645	3844	4057	4037	4313	4820	5141	6168	6836
Unknown Citizenship	43	108	114	121	117	58	53	48	43	50	115	62
Native Americans	31	56	44	51	54	40	59	63	52	49	52	73
U.S. Citizens	31	56	44	50	54	40	58	62	52	49	52	73
Permanent Visas*	-	-	-	1	-	-	-	-	-	-	-	-
Temporary Visas*	-	-	-	-	-	-	1	1	-	-	-	-
Unknown Citizenship	-	-	-	-	-	-	-	-	-	-	-	-
Asians	1799	2223	2355	2542	2780	2945	3040	3349	3843	4155	5026	5685
U.S. Citizens	244	315	281	312	338	329	347	369	414	441	426	469
Permanent Visas	547	499	444	431	389	437	417	455	456	459	480	479
Temporary Visas	993	1341	1567	1731	1982	2137	2258	2505	2955	3242	4075	4704
Unknown Citizenship	15	68	63	68	71	42	18	20	18	13	45	33
Blacks	845	924	911	833	903	851	707	701	697	684	730	728
U.S. Citizens	652	499	483	413	427	379	323	317	315	327	350	385
Permanent Visas	47	80	81	73	81	117	106	118	126	125	128	127
Temporary Visas	143	339	340	339	382	354	275	261	251	222	242	212
Unknown Citizenship	3	6	7	8	13	1	3	5	5	10	10	4
Hispanics	355	657	650	635	621	646	665	677	681	665	758	786
U.S. Citizens	253	275	344	288	314	300	302	332	323	309	378	358
Permanent Visas	16	47	52	45	47	50	71	50	65	69	70	89
Temporary Visas	82	321	247	288	252	294	289	288	288	284	308	335
Unknown Citizenship	4	14	7	14	8	2	3	7	5	3	2	4
Whites	20023	16035	15578	15309	14774	14462	13960	13883	14135	13847	14750	14429
U.S. Citizens	18371	14459	13990	13610	13171	12810	12307	12168	12343	11989	12679	12364
Permanent Visas	425	331	309	381	350	367	410	441	451	441	470	459
Temporary Visas	1206	1225	1242	1287	1228	1272	1214	1258	1326	1393	1543	1585
Unknown Citizenship	21	20	37	31	25	13	29	16	15	24	58	21
Unknown Race/Ethnicity	2209	1570	1480	1379	1506	1609	2160	2265	2269	2411	1639	1985
U.S. Citizens	876	756	420	447	426	365	299	327	278	282	266	236
Permanent Visas	169	16	29	22	25	28	63	53	67	45	39	42
Temporary Visas	697	161	225	227	290	338	377	409	313	302	449	314
Unknown Citizenship	467	637	806	683	765	878	1421	1476	1611	1782	885	1393

APPENDIX TABLE B-2 (Continued)

Doctorates: WOMEN

	Year of Doctorate											
	1976	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TOTAL WOMEN	7684	9892	10093	10533	10699	10744	11304	11425	11812	12507	13102	13765
U.S. Citizens	6842	8701	8829	9239	9297	9147	9445	9408	9563	10003	10735	10836
Permanent Visas	290	308	313	322	332	325	365	461	458	487	508	618
Temporary Visas	408	553	583	627	698	833	862	888	1061	1204	1457	1702
Unknown Citizenship	144	330	368	345	372	439	632	668	730	813	402	609
Total Known Race/Ethnicity	7239	9249	9549	10019	10150	10114	10491	10544	10939	11544	12529	13006
U.S. Citizens	6631	8403	8649	9061	9121	8990	9314	9257	9454	9901	10622	10741
Permanent Visas	253	300	304	318	327	320	353	445	448	470	486	606
Temporary Visas	343	531	558	605	665	791	800	828	1018	1154	1382	1642
Unknown Citizenship	12	15	38	35	37	13	24	14	19	19	39	17
Native Americans	9	29	33	31	20	56	41	53	42	45	45	57
U.S. Citizens	9	29	33	31	20	56	41	53	42	45	44	55
Permanent Visas*	-	-	-	-	-	-	-	-	-	-	-	2
Temporary Visas*	-	-	-	-	-	-	-	-	-	-	1	-
Unknown Citizenship	-	-	-	-	-	-	-	-	-	-	-	-
Asians	324	488	549	582	614	697	687	777	935	1027	1261	1586
U.S. Citizens	90	150	171	180	174	187	183	173	200	185	214	293
Permanent Visas	94	109	108	120	118	116	111	170	165	176	182	250
Temporary Visas	138	223	262	275	313	389	387	428	561	662	854	1035
Unknown Citizenship	2	6	8	7	9	5	6	6	9	4	11	8
Blacks	462	567	615	549	591	589	563	517	566	562	618	627
U.S. Citizens	443	514	564	509	526	533	500	451	499	494	547	548
Permanent Visas	7	17	15	10	21	14	20	21	26	16	21	22
Temporary Visas	12	33	33	24	37	41	38	44	40	51	48	57
Unknown Citizenship	-	3	3	6	7	1	5	1	1	1	2	-
Hispanics	105	274	270	334	297	354	390	378	370	399	468	494
U.S. Citizens	87	189	191	251	222	261	269	286	274	273	340	350
Permanent Visas	7	15	27	24	24	23	36	41	34	43	47	46
Temporary Visas	11	68	47	54	48	66	83	50	61	80	76	96
Unknown Citizenship	-	2	5	5	3	4	2	1	1	3	5	2
Whites	6339	7891	8082	8523	8628	8418	8810	8819	9026	9511	10137	10242
U.S. Citizens	6002	7521	7690	8090	8179	7953	8321	8294	8439	8904	9477	9495
Permanent Visas	145	159	154	164	164	167	186	213	223	235	236	286
Temporary Visas	182	207	216	252	267	295	292	306	356	361	403	454
Unknown Citizenship	10	4	22	17	18	3	11	6	8	11	21	7
Unknown Race/Ethnicity	445	643	544	514	549	630	813	881	873	963	573	759
U.S. Citizens	211	298	180	178	176	157	131	151	109	102	113	95
Permanent Visas	37	8	9	4	5	5	12	16	10	17	22	12
Temporary Visas	65	22	25	22	33	42	62	60	43	50	75	60
Unknown Citizenship	132	315	330	310	335	426	608	654	711	794	363	592

NOTE: The reader is referred to the explanatory note about this table in front of Appendix B.

*In most cases, non-U.S. Native Americans are citizens of Canada or of Latin American countries.

SOURCE: National Research Council, Survey of Earned Doctorates.

APPENDIX TABLE B-3 Broad Field Selection of U.S. Male Ph.D.s, by Race/Ethnicity for Selected Years, 1976-1991

	All Fields	Physical Sci.*	Eng.	Life Sci.	Social Sci.	Humanities	Educ.	Prof./ Other
All U.S. Men								
1976	20,427	3,129	1,523	3,154	3,862	2,873	4,756	1,130
1981	16,360	2,707	1,117	3,225	3,200	1,886	3,341	884
1986	13,636	2,488	1,241	2,735	2,427	1,478	2,419	848
1991	13,885	2,738	1,710	2,678	2,001	1,671	2,169	918
Asians								
1976	244	56	57	54	36	15	18	8
1981	315	61	71	72	45	19	37	10
1986	347	84	74	91	40	10	26	22
1991	469	109	159	105	31	16	26	23
Blacks								
1976	652	22	12	40	104	53	386	35
1981	499	26	16	31	88	43	267	28
1986	323	18	10	28	70	29	142	26
1991	385	27	35	38	82	40	135	28
Hispanics								
1976	253	22	15	26	47	47	77	19
1981	275	31	12	34	64	49	76	9
1986	302	41	22	39	76	38	69	17
1991	358	65	37	53	81	50	60	12
Native Americans								
1976	31	0	0	3	7	2	15	4
1981	56	2	4	9	7	8	24	2
1986	58	4	5	11	12	6	16	4
1991	73	11	4	13	11	3	28	3
Whites								
1976	18,371	2,869	1,389	2,904	3,483	2,581	4,129	1,016
1981	14,459	2,416	966	2,925	2,856	1,679	2,834	783
1986	12,307	2,256	1,104	2,510	2,176	1,366	2,127	768
1991	12,364	2,466	1,443	2,425	1,761	1,525	1,903	841
Unknown Race/Ethnicity								
1976	876	160	50	127	185	175	131	48
1981	756	171	48	154	140	88	103	52
1986	299	85	26	56	53	29	39	11
1991	236	60	32	44	35	37	17	11

NOTE: Refer to the explanatory note about this table in front of Appendix B. See Table S-2 for comparable data on U.S. women.

*Includes mathematics and computer sciences.

SOURCE: National Research Council, Survey of Earned Doctorates.

APPENDIX TABLE B-4 Major Field Selection of U.S. Male Ph.D.s, by Race/Ethnicity, 1991 (in percent)

	All U.S. Men	Asians	Blacks	His-panics	Native Amers.	Whites	Unknown Race/ Ethnicity
ALL FIELDS (No.)	**13,885**	**469**	**385**	**358**	**73**	**12,364**	**236**
Physical Sciences*	**19.7**	**23.2**	**7.0**	**18.2**	**15.1**	**19.9**	**25.4**
Engineering	**12.3**	**33.9**	**9.1**	**10.3**	**5.5**	**11.7**	**13.6**
Life Sciences	**19.3**	**22.4**	**9.9**	**14.8**	**17.8**	**19.6**	**18.6**
Biological Sciences	14.3	18.8	5.2	12.3	8.2	14.5	13.1
Health Sciences	1.6	2.1	3.4	0.8	4.1	1.5	2.1
Audiology/Speech Pathology	0.1	0.0	0.3	0.0	0.0	0.1	0.4
Nursing	0.1	0.0	0.3	0.0	1.4	0.1	0.0
Public Health/Epidemiology	0.4	0.6	1.0	0.0	2.7	0.4	0.8
Other Health Sciences	0.9	1.5	1.8	0.8	0.0	0.9	0.8
Agricultural Sciences	3.4	1.5	1.3	1.7	5.5	3.6	3.4
Social Sciences	**14.4**	**6.6**	**21.3**	**22.6**	**15.1**	**14.2**	**14.8**
Psychology	7.5	2.6	9.9	12.8	6.8	7.6	3.4
Clinical†	4.3	0.9	4.7	9.8	6.8	4.3	1.7
Nonclinical	3.2	1.7	5.2	3.1	0.0	3.3	1.7
Anthropology	0.7	0.2	0.5	0.8	0.0	0.8	1.7
Economics	2.0	2.1	2.3	1.4	1.4	1.9	3.4
Political Sci./Int'l. Relations	1.7	0.9	3.1	2.0	2.7	1.7	2.5
Sociology	1.0	0.4	1.3	3.4	2.7	0.9	2.1
Other Social Sciences	1.5	0.4	4.2	2.2	1.4	1.4	1.7
Humanities	**12.0**	**3.4**	**10.4**	**14.0**	**4.1**	**12.3**	**15.7**
History	2.4	0.2	3.4	2.0	0.0	2.4	4.7
Amer./Eng. Lang. & Lit.	2.2	0.6	1.6	1.4	1.4	2.3	1.7
Foreign Lang. & Lit.	0.9	0.4	0.5	4.5	0.0	0.8	0.8
Other Humanities	6.6	2.1	4.9	6.1	2.7	6.9	8.5
Education	**15.6**	**5.5**	**35.1**	**16.8**	**38.4**	**15.4**	**7.2**
Curriculum/Educ. Admin.	6.1	0.9	15.1	4.7	12.3	6.1	3.0
Curriculum & Instruction	1.5	0.2	2.3	2.0	1.4	1.5	0.8
Educ. Admin./Supervision	4.6	0.6	12.7	2.8	11.0	4.6	2.1
Teacher Educ./Teaching Fields	3.0	0.9	5.2	3.9	2.7	3.0	1.7
Other Education	6.5	3.8	14.8	8.1	23.3	6.3	2.5
Professional/Other	**6.6**	**4.9**	**7.3**	**3.4**	**4.1**	**6.8**	**4.7**
Business & Management	3.2	2.8	2.1	1.4	1.4	3.3	2.1
Communications	0.9	0.2	2.1	0.3	1.4	0.9	0.4
Other Professional Fields	2.4	1.9	3.1	1.4	1.4	2.5	2.1
Library/Archival Sciences	0.1	0.0	0.3	0.0	0.0	0.1	0.4
Social Work	0.4	0.2	1.0	0.3	0.0	0.4	0.0
Other	1.9	1.7	1.8	1.1	1.4	1.9	1.7
Other Fields	0.1	0.0	0.0	0.3	0.0	0.1	0.0

NOTE: See Appendix Table B-3 for numbers of Ph.D.s in each broad field. Refer also to the explanatory note about this table in front of Appendix B. See Table S-3 for comparable data on U.S. women.

*Includes mathematics and computer sciences.
†Comprises clinical, counseling, and school psychology.

SOURCE: National Research Council, Survey of Earned Doctorates.

APPENDIX TABLE B-5 Doctorate-Granting Institutions of U.S. Male Ph.D.s, by Race/Ethnicity of Recipient and Carnegie Classification of Institution for Selected Years, 1976-1991 (in percent)

	All Institutions (No.)	Research I & II	Doctorate-Granting I & II	Comprehensive I & II	Liberal Arts I & II	Other Known Carnegie
All U.S. Men						
1976	20,427	78.6	18.8	0.6	0.1	1.9
1981	16,360	76.9	19.2	0.8	0.1	3.0
1986	13,636	76.7	18.7	1.1	0.3	3.2
1991	13,885	76.6	17.7	1.6	0.2	3.9
Asians						
1976	244	81.6	16.4	1.2	0.0	0.8
1981	315	82.5	14.3	0.6	0.3	2.2
1986	347	75.2	17.6	1.4	0.3	5.5
1991	469	82.2	13.7	0.9	0.0	3.2
Blacks						
1976	652	73.2	25.8	0.5	0.0	0.6
1981	499	74.5	23.8	0.8	0.2	0.6
1986	323	68.4	29.1	0.9	0.0	1.5
1991	385	68.4	27.4	2.3	0.0	1.8
Hispanics						
1976	253	77.9	21.3	0.4	0.0	0.4
1981	275	73.8	23.3	2.5	0.0	0.4
1986	302	71.5	22.5	4.0	0.3	1.7
1991	358	75.1	17.1	2.2	0.0	5.6
Native Americans						
1976	31	58.1	41.9	0.0	0.0	0.0
1981	56	78.6	19.6	0.0	0.0	1.8
1986	58	70.7	20.7	3.4	1.7	3.4
1991	73	74.0	23.3	1.4	0.0	1.4
Whites						
1976	18,371	78.6	18.7	0.6	0.1	2.0
1981	14,459	76.7	19.3	0.8	0.1	3.0
1986	12,307	77.0	18.5	1.0	0.3	3.3
1991	12,364	76.5	17.7	1.6	0.3	4.0
Unknown Race/Ethnicity						
1976	876	83.7	13.2	1.0	0.5	1.6
1981	756	79.4	14.0	1.2	0.1	5.3
1986	299	83.3	13.4	1.3	0.3	1.7
1991	236	86.0	10.6	1.7	0.4	1.3

NOTE: Percentages are based on the number of Ph.D.s whose doctorate institution had a 1987 Carnegie Classification. Institutions which did not exist at that time cannot be classified. In 1991, a total of 24 U.S. men received doctorates from 2 unclassified schools—Walden University and Mayo Graduate School. Walden University awarded Ph.D.s to 2 Asians, 1 black, and 15 whites. Mayo Graduate School granted degrees to 1 black, 1 Hispanic, and 4 whites. Refer to the explanatory note about this table in front of Appendix B. See Table S-4 for comparable data on U.S. women.

SOURCE: National Research Council, Survey of Earned Doctorates.

APPENDIX C: Technical Notes

IMPORTANT NOTICE: Because of recent increases in response rates, the data on citizenship and race/ethnicity for 1990 and 1991 are not comparable to data for earlier years. Please refer to the shaded boxes on pages 106 and 109 for further explanation.

The tables and figures in this report display percentages that are based only on the number of doctorate recipients who *responded* to the applicable survey questions; recipients who did not respond are excluded.[1] For the most part, the technical notes provide the rates of *nonresponse* to questions covered in the report. Presented first is a table showing the overall nonresponse rates for various data items in 1991. Then follows a series of notes pertaining to specific tables and figures that appear in the body of the report. These notes provide nonresponse rates for selected populations and years, as well as additional descriptive explanation of the data as needed.

In 1991, 94.3 percent of new recipients completed the survey questionnaire; this percentage is referred to as the "self-report" rate. For the remaining 5.7 percent of recipients, "skeletal" survey forms were created using information from doctorate-granting institutions or commencement programs. Whether or not individuals completed the survey questionnaire, the following four data items were available for all recipients: gender, Ph.D. institution, Ph.D. field, and Ph.D. year. The nonresponse in a tabulation is dependent on the combination of selected variables. Higher nonresponse rates will always occur when any of the four above-mentioned variables is crossed with another variable (e.g., debt level) because the universe comprises the entire doctoral cohort. This means that the 5.7 percent of Ph.D.s who did not respond to the survey are included, even though their records contain minimal information. Nonresponse will be much lower when citizenship or race/ethnicity is cross-tabulated with a variable such as debt level because the population is restricted to a group (e.g., U.S. citizens) that is largely drawn from self-reported forms and, thus, more likely to include responses to debt level. To be more precise, the nonresponse rate for debt level in 1991 was only 1.3 percent for U.S. citizens, 2.8 percent for permanent residents, and 3.6 percent for temporary residents; nonresponse was low because information on both citizenship and debt is mostly obtained from self-reported forms. Nonresponse was much higher when

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[1] Appendix Tables A-3 and A-4 are exceptions. Because these tables include categories for "unknown" responses, percentages are based on the total doctoral cohort.

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debt level was crossed with gender (7.8 percent for men and 6.0 percent for women) because the 5.7 percent of Ph.D.s who were not self-reporting and for whom there is minimal information were included in the population.

*** IMPACT OF INCREASED RESPONSE RATES ***

Although the Survey of Earned Doctorates has typically exhibited a high response rate, the percentage of self-reported questionnaires declined throughout the 1980s, falling from 96.2 percent in 1980 to a low of 91.4 percent in 1989. This downward trend was reversed in 1990 when the response rate increased nearly two percentage points. It rose yet another point in 1991, reaching 94.3 percent.

Item response rates showed a parallel improvement—a natural consequence of the increase in the overall survey response but also partially because of questionnaire revisions and follow-ups for missing pieces of information. New follow-up procedures instituted in 1990 had an especially strong impact on citizenship and racial/ethnic data for that year. However, since the responses to the follow-ups were not received until *after* closure of the 1990 survey, they were not included in the data presented in *Summary Report 1990.* The updated 1990 numbers reflecting follow-up responses are shown in Appendix Table B-2 in this year's report (page 98). The most significant adjustment was to the numbers of black Ph.D.s—an increase of 8.3 percent among those who were U.S. citizens and 4.7 percent among temporary residents. The data for 1991 will likewise be subject to some revision over the next year. It is important, therefore, for readers to keep in mind that fluctuations in response rates affect numerical trends and that 1990 and 1991 data on citizenship and race/ethnicity, in particular, are not comparable to earlier data.

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The 1991 *nonresponse* rates for items discussed in this report are given below.

ITEM NONRESPONSE RATES: 1991

Data Item	Nonresponse Rate (%)
Baccalaureate field	8.1
Baccalaureate institution	5.0*
Baccalaureate year (for time-to-Ph.D.)	6.0
Birth year (for age)	5.3
Citizenship	5.5
Country of citizenship	2.1 (of non-U.S. citizens)
Cumulative debt	7.2
Doctorate field	0.0
Doctorate institution	0.0
Doctorate year	0.0
Gender	0.0
Marital status	8.7
Master's institution	21.8 (includes non-M.A.s)
Postdoctoral employer type	5.1 (of employed Ph.D.s)
Postdoctoral location	10.6
Postdoctoral plans (employment vs. study)	8.1
Postdoctoral status (definite vs. seek)	8.7
Race/ethnicity	6.5
Sources of graduate school support	6.3
Years not enrolled from (for time-to-Ph.D.):	
Baccalaureate to graduate entrance	11.1
Graduate entrance to doctorate	16.4

NOTE: In 1991, 94.3 percent of new doctorate recipients completed the survey form. The item nonresponse rates in this table include the 5.7 percent of recipients who were not self-reporting. Basic information for the missing group was obtained from the doctorate-granting institutions or commencement programs. Field, institution, and year of doctorate are available for all recipients, as is gender.

* The nonresponse rate to this item is less than the overall nonresponse rate of 5.7 percent because baccalaureate institution is sometimes available from commencement programs.

1. Figure 3 (page 4), Table 2 (page 5), and Table 5 (page 13): Percentages in **Figure 3** are based on the number of doctorate recipients who reported their citizenship status. Nonresponses are excluded from the computations (see below).

Citizenship Status: Nonresponse Rates (%)

	1961	1966	1971	1976	1981	1986	1991
All Ph.D.s	1.4	2.4	1.6	2.0	3.4	6.6	5.5
Physical Sciences	1.6	2.7	1.5	1.4	2.7	6.3	4.7
Engineering	0.6	3.6	0.9	2.6	4.5	8.2	7.3
Life Sciences	1.1	1.5	1.9	2.5	2.5	5.4	4.0
Social Sciences	1.7	2.7	1.5	1.6	3.8	7.1	6.8
Humanities	2.5	2.9	1.4	1.8	3.8	7.3	4.7
Education	0.4	1.0	0.6	2.0	3.4	5.7	5.0
Professional/Other	2.1	4.6	10.6	3.0	4.6	8.5	7.5

Note: See Table 5 for total numbers of Ph.D.s in each field. Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

Table 2 lists the leading countries of origin of non-U.S. Ph.D.s. Of the 10,666 non-U.S. Ph.D.s in 1991, 223 (or 2.1 percent) did not report their country of citizenship. **Table 5** displays the numbers of Ph.D.s in each citizenship group. See the table above for rates of nonresponse to the question on citizenship status.

2. Figure 4 (page 6): Figure 4 compares the representation of minorities among U.S. citizen Ph.D.s in 1991 with their representation in 1976. Nonresponses are excluded from the percentage computations. The nonresponse rate among U.S. citizens to the question on race/ethnicity was 4.0 percent in 1976 and 1.3 percent in 1991. (See Appendix Table B-2 for total numbers of U.S. Ph.D.s; see technical note 1 for rates of nonresponse to citizenship status.) A historical discussion of the racial/ethnic question and ***important information on recent adjustments to racial/ethnic data*** are presented below and on the next page.

Although the item on race/ethnicity was first introduced to the Survey of Earned Doctorates in 1973, over 25 percent of recipients in 1973 and about 13 percent in 1974 either completed superseded questionnaires or provided unusable responses. Since 1975, the racial/ethnic data have been more reliable, with response rates ranging between 91 and 95 percent. The information on race/ethnicity presented in this report is limited to the period 1976 to 1991.

The racial/ethnic question has undergone several revisions over the years. In 1977, it was modified to correspond to a standard question format recommended by the Federal Interagency Committee on Education and adopted by the Office of Management and Budget (OMB) for use in federally sponsored surveys; an explanation of the effect of these changes is detailed on page 13 of *Summary Report 1977.* (Note: Changes in the OMB guidelines prompted the moving of persons having origins in the Indian

2. Figure 4 (continued)

subcontinent from the white category to the Asian category.) In 1980, the question was further revised in two ways: (1) the Hispanic category was subdivided into Puerto Rican, Mexican American, and "other" Hispanic to provide more detail for users of the racial/ethnic data, and (2) respondents were asked to check only one racial category. (Before 1980, doctorate recipients could check more than one category to indicate their race. When the data were compiled, however, all persons who checked American Indian, Asian, or Hispanic and also checked white were included in the minority group category. Those who checked black and any other category were designated as black.) The item was modified again in 1982 to separate the questions on race and ethnicity. Since then, respondents have been asked to first check one of the four racial group categories (American Indian, Asian, black, or white) and to then indicate whether or not they are Hispanic. In this report, Ph.D.s who reported Hispanic heritage are classified as "Hispanic" regardless of their racial designations; Ph.D.s who checked the category "American Indian or Alaskan Native" are identified as "Native American"; and Ph.D.s from 1976 to 1979 who indicated that they were both white and a minority are included with the minority group.

*** ADJUSTMENTS TO 1990 RACIAL/ETHNIC DATA ***

Readers should note that the racial/ethnic data for 1990 and 1991 are not comparable to data collected in earlier years because of procedural changes and recent improvements in the survey's overall response rate.

New follow-up procedures instituted in 1990 have resulted in adjustments to racial/ethnic data since publication of *Summary Report 1990.* This was especially true for black doctorates in 1990, for whom there was a 8.3 percent increase among U.S. citizens and a 4.7 percent increase among temporary residents. Appendix Table B-2 in this report presents the updated 1990 numbers. Any adjustments to the 1991 data will be presented in next year's report.

3. Figure 7 (page 14), Table 6 (page 15), and Table 7 (page 16): Total elapsed time from baccalaureate to doctorate (TTD) can only be computed for individuals whose baccalaureate year is known (note: BA year is often obtained from commencement programs or doctorate institutions when not reported by the recipient). Registered time (RTD) is the time actually enrolled in a college or university between receipt of the baccalaureate and the doctorate; RTD cannot be computed for individuals who have not provided all years of college attendance after earning the baccalaureate. Enrollment includes years of attendance not related to a recipient's doctoral program. Months are excluded from the computations because they are often not reported by the respondent. Nonresponse rates for time-to-doctorate are presented on the next page.

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3. Figure 7, Table 6, and Table 7 (continued)

Time-to-Doctorate: Nonresponse Rates by Field (%)

(Figure 7, Table 6)	1961 TTD	1961 RTD	1971 TTD	1971 RTD	1981 TTD	1981 RTD	1991 TTD	1991 RTD
All Fields	1.4	5.8	1.7	7.5	3.4	11.9	6.0	16.4
Physical Sciences	1.1	4.2	1.3	5.4	2.7	10.6	5.4	14.9
Engineering	0.5	3.2	1.5	6.0	5.9	12.1	7.6	16.8
Life Sciences	3.0	7.1	2.9	8.5	3.6	10.7	6.8	18.2
Social Sciences	1.1	6.5	1.3	7.4	3.4	11.4	6.4	15.9
Humanities	2.1	8.0	1.7	9.8	3.4	13.5	4.9	14.9
Education	0.0	4.7	0.6	6.3	2.6	12.7	4.6	16.7
Professional/Other	1.1	7.0	8.4	15.0	4.6	13.8	6.8	17.9

Note: See Table 3 for total numbers of Ph.D.s in each field. Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

Time-to-Doctorate: Nonresponse Rates by Demographic Group in 1991 (%)

(Table 7)	1991 TTD	1991 RTD
All Ph.D.s	6.0	16.4
Men	6.8	16.9
Women	4.7	15.5
U.S. Citizens	0.7	9.6
Permanent Residents	5.4	15.2
Temporary Residents	4.8	17.2
(U.S. Citizens)		
Asians	1.0	10.8
Blacks	0.9	12.6
Hispanics	1.6	13.1
Native Americans	0.0	7.8
Whites	0.6	9.2

Note: For total numbers of Ph.D.s, see Table 4 (gender), Table 5 (citizenship), and Appendix Table B-2 (race/ethnicity). Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

4. Table 8 (page 18): Percentages in Table 8 are based on the numbers of doctorate recipients in 1991 who reported their *primary* source of support in graduate school. Because many recipients who answered the question on sources of support did not designate a *primary* source, nonresponse was quite high (see table below). The numbers shown in Table 8 represent only those Ph.D.s whose primary support is known, not the total cohort of Ph.D.s for that year.

Primary Source of Support: Nonresponse Rates in 1991 (%)

	All Fields	Phys. Sci.	Engr.	Life Sci.	Soc. Sci.	Hum.	Educ.	Prof.
All Ph.D.s	22.5	19.9	21.6	20.4	23.7	25.9	24.4	23.9
Men	23.1	20.5	22.3	21.5	25.2	25.8	25.6	25.2
Women	21.6	16.9	14.4	18.7	22.2	26.1	23.5	21.5
U.S. Citizens	16.1	12.1	9.5	15.1	16.2	21.0	19.2	16.1
Permanent Res.	26.7	18.7	18.6	28.9	32.7	34.3	40.8	20.5
Temporary Res.	22.1	22.0	20.0	21.1	24.0	25.5	28.2	23.3
(U.S. Citizens)								
Asians	21.1	21.7	13.0	21.5	22.6	36.4	23.5	30.8
Blacks	25.6	15.0	16.3	23.5	30.7	20.9	26.0	29.5
Hispanics	25.7	23.8	14.9	23.7	26.7	27.3	28.2	28.6
Native Amers.	27.3	28.6	33.3	31.6	19.0	20.0	30.8	16.7
Whites	14.9	10.9	8.4	14.2	14.6	20.2	17.9	14.4

Note: For total numbers of Ph.D.s in each field, see Table 4 (gender), Table 5 (citizenship), and Appendix Table B-2 (race/ethnicity). Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

5. Figure 8 (page 19) and Table 9 (page 20): Percentages are based on the numbers of doctorate recipients who reported the cumulative level of debt related to their *undergraduate and graduate education*. Nonresponses are excluded from the percentage computations (see table on next page).

5. Figure 8 and Table 9 (continued)

Cumulative Educational Debt: Nonresponse Rates in 1991 (%)

	Rate		Rate
All Fields	7.2	Men	7.8
Physical Sciences	6.2	Women	6.0
Engineering	9.6	U.S. Citizens	1.3
Life Sciences	6.0	Permanent Res.	2.8
Social Sciences	8.3	Temporary Res.	3.6
Humanities	6.0	U.S. Asians	0.9
Education	6.2	Blacks	1.5
Professional	9.1	Hispanics	2.0
		Native Amers.	0.0
		Whites	1.2

Note: For total numbers of Ph.D.s, see Table 4 (field and gender), Table 5 (citizenship), and Appendix Table B-2 (race/ethnicity). Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

6. Tables 10-14 and Figure 9 (pages 21-27): The question on *postgraduation status* asks recipients to indicate whether they have made a "definite" commitment, are in the process of "negotiating" with one or more organizations, or are seeking a position but with no prospects. Because Ph.D.s sometimes complete the survey form months ahead of graduation, it is not possible to determine the final plans of many recipients. It is quite likely, however, that some individuals who check "negotiating" or "seeking" have obtained positions by the time of graduation. Because all outcomes are not known, data on postgraduation plans in this report are restricted to the group of Ph.D.s who reported "definite" plans.[2] See pages 113 and 114 for rates of nonresponse to the question on postgraduation status and for the proportions of Ph.D.s with "definite" plans.

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[2] Comparisons with the most recent longitudinal Survey of Doctorate Recipients (SDR) have shown the data on "definite" postgraduation plans to be a reasonable predictor of the actual employment status of new Ph.D.s in the year following receipt of the doctorate. (The SDR, also conducted by the National Research Council, is a follow-up employment survey of a sample of doctorate recipients in science, engineering, and humanities fields.) According to the 1989 SDR, 97.2 percent of the 1987-1988 Ph.D.s who had indicated "definite" employment plans in the United States at the time of graduation were in the U.S. labor force as of February 1989, and most were working in the sector reported on their survey forms. Among non-U.S. citizens, the percentages were also quite high: 98.5 percent of permanent residents and 94.8 percent of temporary residents were still working in the United States a year after graduation.

6. Tables 10-14 and Figure 9 (continued)

Postgraduation Status: Nonresponse Rates (%)

	1971	1976	1981	1986	1991
All Fields	4.8	5.9	8.6	9.9	9.2
Physical Sciences	4.5	4.9	7.1	10.7	8.8
Engineering	3.9	5.8	9.4	12.8	12.5
Life Sciences	5.0	5.6	8.7	8.6	7.8
Social Sciences	5.3	5.7	9.1	10.1	10.0
Humanities	5.8	8.1	9.6	10.9	7.9
Education	2.9	5.5	8.2	8.1	8.0
Professional/Other	12.8	6.9	9.2	10.4	10.3
Men	4.5	5.7	8.4	10.6	9.9
Women	6.7	6.9	9.2	8.6	7.8
U.S. Citizens	3.2	4.1	4.9	2.7	2.8
Permanent Residents	3.8	4.6	7.9	7.1	6.6
Temporary Residents	4.5	5.9	8.7	7.3	7.1
(U.S. & Perm. Res.)	3.2	4.1	5.1	3.0	3.1
Asians	N/A	4.4	7.7	7.8	6.1
Blacks	N/A	3.8	5.7	3.3	5.4
Hispanics	N/A	3.6	4.9	4.0	4.0
Native Americans	N/A	2.5	3.5	3.0	3.1
Whites	N/A	2.4	3.8	2.5	2.6

Note: N/A=not available. For total numbers of Ph.D.s, see Table 4 (field and gender), Table 5 (citizenship), and Appendix Table B-2 (race/ethnicity by citizenship). Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

The proportions of Ph.D.s with "definite" commitments are given in the next two tables. These percentages are based on the number of Ph.D.s who responded to the question on postgraduation status (see table above for rates of nonresponse to this question):

Year	% Definite	Year	% Definite
1971	78.7	1986	74.1
1976	72.6	1991	70.8
1981	76.4		

Note: See Table 1 for total numbers of Ph.D.s. See Table 10 for numbers of Ph.D.s with definite commitments.

6. Tables 10-14 and Figure 9 (continued)

The table below displays **the *proportions of Ph.D.s with "definite" commitments in 1991 by field and demographic group, and the range of proportions for the five years included in Tables 10-14 and Figure 9 (i.e., 1971, 1976, 1981, 1986, 1991).***

	% Definite			% Definite	
	Range	(1991)		Range	(1991)
All Fields	71-79	(70.8)	Men	71-80	(70.5)
Physical Sciences	71-81	(70.5)	Women	67-72	(71.3)
Engineering	63-78	(62.6)	U.S. Citizens	74-80	(74.2)
Life Sciences	75-79	(74.5)	Permanent Res.	58-67	(57.5)
Social Sciences	70-83	(70.3)	Temporary Res.	64-73	(63.5)
Humanities	61-81	(64.7)	U.S. & Perm. Res.	73-79	(73.1)
Education	75-78	(74.9)	Asians	62-71	(62.1)
Professional	79-88	(78.6)	Blacks	69-73	(68.9)
			Hispanics	69-75	(68.7)
			Native Amers.	56-76	(68.3)
			Whites	74-78	(74.2)

Note: For total numbers of Ph.D.s, see Table 4 (field and gender), Table 5 (citizenship), and Appendix Table B-2 (race/ethnicity by citizenship). See Tables 10 and 11 for numbers of Ph.D.s with definite commitments in each year.

Table 10 (page 21) and Table 11 (page 22): These tables present data on the *type of plans (employment or study) for only those Ph.D.s who reported definite postgraduation commitments and, thus, do not reflect the entire Ph.D. population.* (See page 113 and the table above for nonresponses to the question on postgraduation status and the proportions of Ph.D.s with definite commitments.)

Nonresponses to the question on *type of postdoctoral plans (employment or study)* are excluded from percentage calculations in Tables 10 and 11. As is evident from the table on the next page, rates of nonresponse were very low in every year and for all fields and demographic groups.

6. Tables 10-14 and Figure 9 (continued)

Employment/Study Plans of Ph.D.s with Definite Commitments: Nonresponse Rates (%)

	1971	1976	1981	1986	1991
All Fields	0.9	1.0	0.4	0.7	0.6
Physical Sciences	0.5	0.5	0.5	0.5	0.2
Engineering	0.3	0.6	0.4	0.4	0.5
Life Sciences	0.5	0.9	0.4	0.5	0.4
Social Sciences	0.9	0.9	0.2	0.9	0.4
Humanities	1.6	1.8	0.6	1.3	0.9
Education	1.0	1.3	0.3	0.7	1.0
Professional/Other	1.1	1.2	0.4	0.3	0.5
Men	0.8	1.0	0.4	0.6	0.6
Women	1.2	1.3	0.3	0.8	0.6
U.S. Citizens	0.8	1.0	0.3	0.5	0.5
Permanent Residents	1.4	0.8	0.5	0.5	1.2
Temporary Residents	1.3	1.1	0.9	1.3	0.7
(U.S. & Perm. Res.)	0.8	1.0	0.3	0.5	0.5
Asians	N/A	0.5	0.4	1.1	0.9
Blacks	N/A	2.8	0.3	1.3	1.6
Hispanics	N/A	2.3	0.5	0.0	0.2
Native Americans	N/A	4.5	0.0	1.6	0.0
Whites	N/A	0.9	0.3	0.5	0.5

Note: N/A=not available. See Tables 10 and 11 for total numbers of Ph.D.s with definite commitments. Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

Figure 9 (page 23): Figure 9 shows the *proportions of non-U.S. citizens who reported plans to stay in the United States after graduation.* Only Ph.D.s who reported definite commitments are included (see page 113 for rates of nonresponse to the question on postgraduation status). Nonresponses to the question on postdoctoral location are excluded from the percentage calculations in Figure 9 (see table on next page).

6. Tables 10-14 and Figure 9 (continued)

Postdoctoral Location of Non-U.S. Citizen Ph.D.s with Definite Commitments: Nonresponse Rates (%)

	1971	1976	1981	1986	1991
Permanent Residents	3.2	4.0	5.6	9.4	2.6
Temporary Residents	4.1	3.6	6.1	8.0	3.2

Note: The lower nonresponse in 1991 was largely a result of a questionnaire revision that allowed the recipient to check a box for "U.S." or "non-U.S." instead of naming a specific state or foreign country. See Table 11 for total numbers of non-U.S. Ph.D.s with definite commitments. Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

Table 12 (page 24): This table presents data on the *postdoctoral location and type of plans (employment or study) for only those non-U.S. citizens who reported definite commitments* (see page 113 for nonresponses to the question on postgraduation status). Percentages in Table 12 are based on the number of non-U.S. Ph.D.s who reported *both* postdoctoral location and type of plans. Nonresponse rates for these questions are given below.

Postdoctoral Location/Type of Plans of Non-U.S. Citizens with Definite Commitments: Nonresponse Rates in 1991 (%)

	Permanent Residents	Temporary Residents
All Fields	3.7	3.8
Physical Sciences	2.2	4.7
Engineering	4.4	3.6
Life Sciences	3.9	4.2
Social Sciences	7.4	2.1
Humanities	3.0	2.6
Education	4.1	4.8
Professional/Other	0.0	2.8

Note: Numbers of Ph.D.s not reporting both postdoctoral location and type of plans were small: a total of 36 permanent residents (ranging from 3 in education to 9 in social sciences) and 199 temporary residents (ranging from 8 in humanities to 63 in physical sciences). See Table 11 for total numbers of non-U.S. Ph.D.s with definite commitments. Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

6. Tables 10-14 and Figure 9 (continued)

Table 13 (page 25) and Table 14 (page 27): As with the other tables on postgraduation plans, Tables 13 and 14 do not include data on the entire Ph.D. cohort. Instead, they display the *type of employer (i.e., sector) for only those Ph.D.s who reported definite commitments in the United States.* (See pages 113 to 115 for rates of nonresponse to the questions on postgraduation status and type of plans.)

The table below shows the ***proportions of all Ph.D.s with definite commitments who reported employment plans in the United States.***

	U.S. Citizens and Permanent Residents	Temporary Residents
1971	81.6	15.9
1976	79.9	16.4
1981	79.3	22.9
1986	75.6	23.5
1991	73.1	29.4

Note: See Table 11 for total numbers of Ph.D.s with definite commitments. See Table 14 for numbers of Ph.D.s with employment commitments in the United States.

Nonresponses to the question on *employment sector* are excluded from the percentages in Tables 13 and 14. As can be seen in the tables below and on the next page, nonresponse was very low in all years.

Employment Sector of Ph.D.s with Definite Plans to Work in the United States by Field: Nonresponse Rates (%)

(Table 13)	1971	1976	1981	1986	1991
All Fields	0.9	0.5	0.6	1.0	1.0
Physical Sciences	0.5	0.3	0.3	0.1	0.5
Engineering	1.0	0.6	0.4	0.6	0.2
Life Sciences	0.8	0.7	0.2	0.4	0.8
Social Sciences	0.9	0.5	0.6	1.5	1.6
Humanities	0.7	0.3	0.8	0.9	0.8
Education	1.5	0.7	1.1	1.3	1.3
Professional/Other	0.6	0.3	0.0	0.4	0.8

Note: N/A=not available. See Table 13 for total numbers of Ph.D.s with employment commitments in the United States. Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

6. Tables 10-14 and Figure 9 (continued)

Employment Sector of Ph.D.s with Definite Plans to Work in the United States by Demographic Group: Nonresponse Rates (%)

(Table 14)	1971	1976	1981	1986	1991
U.S. Citizens	0.9	0.5	0.6	1.0	1.0
Permanent Residents	1.8	0.9	1.2	0.8	0.7
Temporary Residents	0.0	0.0	0.0	0.0	0.6
(U.S. & Perm. Res.)	0.9	0.5	0.6	1.0	1.0
Men	0.9	0.5	0.5	0.7	0.8
Women	1.5	0.6	1.0	1.4	1.3
Asians	N/A	0.8	1.2	1.2	1.0
Blacks	N/A	1.0	1.6	3.2	1.2
Hispanics	N/A	0.0	1.3	1.5	0.7
Native Americans	N/A	0.0	1.8	2.3	0.0
Whites	N/A	0.5	0.5	0.8	1.0

Note: N/A=not available. See Table 14 for total numbers of Ph.D.s with employment commitments in the United States. Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

U.S. FEMALE DOCTORATES (special section)

7. Figure S-1 (page 31): Percentages in this figure are based on the number of doctorates awarded to U.S. citizens in each field. See technical note 1 for overall rates of nonresponse to the citizenship question. See the table below for nonresponse among women. (Note: Although Figure S-1 shows data for only 1976 and 1991, nonresponse rates are also provided for 1981 and 1986 because these years are included in most of the tables and figures presented in the special section.)

Citizenship Status of Women: Nonresponse Rates (%)

Year	Rate
1976	1.9
1981	3.3
1986	5.6
1991	4.4

Note: See Table 4 for total numbers of female Ph.D.s.

8. Figure S-2 (page 32), Table S-1 (page 43), Table S-2 (page 44), and Table S-3 (page 45): Percentages are based on the number of U.S. citizen Ph.D.s with known race/ethnicity. Refer to technical note 1 for rates of nonresponse to the question on citizenship status among all Ph.D.s; refer to technical note 7 for nonresponse among women. ***See technical note 2 for important information on the racial/ethnic variable***; see below for nonresponse rates to race/ethnicity among U.S. women.

Race/Ethnicity of U.S. Women: Nonresponse Rates (%)

	1976	1981	1986	1991
All Fields	3.1	3.4	1.4	0.9
Physical Sciences	2.0	3.8	1.7	0.8
Engineering	2.9	7.5	2.1	1.9
Life Sciences	2.8	3.7	1.1	1.2
Social Sciences	2.7	2.6	1.5	0.6
Humanities	4.9	3.4	1.6	1.1
Education	2.5	3.6	1.3	0.6
Professional/Other	2.9	3.8	1.1	1.2

Note: See Table S-2 for total numbers of U.S. female Ph.D.s. Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

9. Table S-5 (page 47): Only baccalaureate institutions located in the United States are included in this table. The proportions of each racial/ethnic group reporting U.S. versus foreign institutions are shown below, along with nonresponse rates for each group.

Baccalaureate Institution of U.S. Female Ph.D.s, 1987-1991 (aggregate): Response and Nonresponse Rates (%)

	All U.S. Women (N)	U.S. Instn.	Foreign Instn.	No BA	Non-resp.
Asians	1,065	73.3	25.3	0.4	1.0
Blacks	2,539	98.9	0.6	0.1	0.4
Hispanics	1,523	94.7	4.0	0.3	1.0
Native Americans	239	99.6	0.0	0.0	0.4
Whites	44,609	98.5	1.0	0.2	0.3

Note: 93.7 percent of Asians who held foreign baccalaureates were naturalized citizens, as were 86.7 percent of blacks, 75.4 percent of Hispanics, and 51.1 percent of whites.

10. Table S-7 (page 49) and Table S-8 (page 50): Total elapsed time from baccalaureate to doctorate (TTD) can be computed only for individuals whose baccalaureate year is known (note: BA year is often obtained from commencement programs or doctorate institutions when recipients do not provide it). Registered time (RTD), the time actually enrolled in college between receipt of the baccalaureate and the

10. Tables S-7 and S-8 (continued)

doctorate, cannot be computed for individuals who do not provide all years of college attendance after earning the baccalaureate. Enrollment includes years of attendance not related to a recipient's doctoral program. Months are excluded from the computations because they are often not reported by the respondent.

Time-to-Doctorate for U.S. Women: Nonresponse Rates (%)

	1976 TTD	1976 RTD	1981 TTD	1981 RTD	1986 TTD	1986 RTD	1991 TTD	1991 RTD
All Fields	0.3	7.6	0.5	8.4	1.9	8.3	0.7	10.4
Physical Sciences	0.7	4.6	1.1	6.5	2.3	6.2	0.4	6.0
Engineering	2.9	2.9	0.0	11.3	1.4	8.5	0.4	6.0
Life Sciences	0.1	4.6	0.5	5.8	1.7	6.3	0.9	10.7
Social Sciences	0.0	6.2	0.5	6.9	1.8	6.9	0.6	8.5
Humanities	0.8	9.5	0.9	10.4	2.2	7.9	0.5	10.6
Education	0.1	8.7	0.3	9.4	2.0	11.0	0.8	13.1
Professional/Other	0.6	8.4	0.5	10.1	1.4	6.8	0.3	9.4
Asians			(Table S-8)				1.0	11.3
Blacks							0.9	14.1
Hispanics							1.7	12.9
Native Americans							0.0	7.3
Whites							0.6	10.0

Note: See Table S-2 for total numbers of U.S. women in each racial/ethnic group and in each field. Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

11. Table S-9 (page 51): Percentages in this table are based on the numbers of U.S. female Ph.D.s in 1991 who reported their *primary* source of support in graduate school. Because many recipients who answered the question on sources of support did not designate a *primary* source, nonresponse was quite high (see table on next page). The numbers shown in Table S-9 represent only those Ph.D.s whose primary support is known, not the total cohort of Ph.D.s for that year.

11. Table S-9 (continued)

Primary Source of Support for U.S. Women: Nonresponse Rates in 1991 (%)

	All U.S. Women	Asians	Blacks	Hisp-anics	Native Amers.	Whites	Unkn. R/E
All Fields	16.8	24.6	23.2	27.4	25.5	15.6	30.5
Physical Sciences	9.6	17.6	7.7	13.3	33.3	8.4	66.7
Engineering	6.7	23.1	0.0	0.0	50.0	5.1	0.0
Life Sciences	14.2	27.2	19.1	22.7	33.3	13.2	20.8
Social Sciences	16.4	24.5	29.1	28.4	20.0	15.0	25.0
Humanities	21.4	32.1	21.6	31.7	14.3	20.6	37.5
Education	19.0	18.2	21.9	30.9	25.0	18.0	40.0
Professional/Other	16.9	37.5	30.0	25.0	33.3	14.8	25.0

Note: Unkn. R/E = Unknown Race/Ethnicity. See Table S-2 for total numbers of U.S. women in each racial/ethnic group and in each field. Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

12. Table S-11 (pages 54-55): Percentages in this table are based on the numbers of U.S. women who reported the cumulative level of debt related to their *undergraduate and graduate education*. Nonresponses are excluded from percentage computations.

Cumulative Educational Debt of U.S. Women: Nonresponse Rates in 1991 (%)

	All U.S. Women	Asians	Blacks	Hisp-anics	Native Amers.	Whites	Unkn. R/E
All Fields	1.3	1.0	1.3	2.0	0.0	1.2	7.4
Physical Sciences	1.0	2.0	0.0	0.0	0.0	0.6	33.3
Engineering	1.1	3.8	0.0	0.0	0.0	0.9	0.0
Life Sciences	0.9	0.0	0.0	0.0	0.0	0.9	8.3
Social Sciences	1.3	0.0	0.9	2.1	0.0	1.3	0.0
Humanities	1.5	0.0	0.0	1.7	0.0	1.5	6.3
Education	1.4	1.8	2.2	3.6	0.0	1.2	10.0
Professional/Other	1.2	0.0	0.0	0.0	0.0	1.4	0.0

Note: Unkn. R/E = Unknown Race/Ethnicity. Numbers of U.S. women not reporting debt level were small: 3 Asians, 7 blacks, 7 Hispanics, 112 whites, and 7 of unknown race/ethnicity. See Table S-11 for total numbers of U.S. women in each field. Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

13. Tables S-12 to S-16 (pages 56-60): Only U.S. women who responded to the question on postgraduation status (definite commitment, negotiating, or seeking) are included in these tables. Nonresponse rates for this question are given below. For additional information on postgraduation plans data, see technical note 6.

Postgraduation Status of U.S. Women: Nonresponse Rates (%)

	All U.S. Women	Asians	Blacks	Hisp-anics	Native Amers.	Whites	Unkn. R/E
1976	5.1	6.7	4.5	4.6	0.0	3.4	51.7
1981	5.9	8.7	5.8	3.7	6.9	5.0	28.2
1986	2.9	5.5	3.4	3.0	2.4	2.6	16.8
1991	3.0	8.5	3.8	5.1	1.8	2.7	5.3
Physical Sciences	2.0	8.8	0.0	0.0	0.0	1.7	0.0
Engineering	2.6	7.7	0.0	0.0	0.0	2.3	0.0
Life Sciences	2.5	6.2	2.1	2.3	0.0	2.2	8.3
Social Sciences	3.1	5.7	5.5	2.1	0.0	3.0	0.0
Humanities	4.3	17.9	2.0	6.7	0.0	3.9	6.3
Education	3.3	12.7	4.8	10.0	4.2	2.7	10.0
Professional/Other	1.5	0.0	0.0	0.0	0.0	1.7	0.0

Note: Unkn. R/E = Unknown Race/Ethnicity. See Table S-2 for total numbers of U.S. women in each racial/ethnic group and in each field. Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

Table S-12 (page 56): This table displays, for 1991, the percentages of U.S. female Ph.D.s who reported *definite postgraduation commitments* by race/ethnicity and field. See the table above for rates of nonresponse to the question on postgraduation status.

Table S-13 (page 57) and Table S-14 (page 58): These tables present data on the *type of plans (employment versus study) for only those U.S. women with definite postgraduation commitments and, thus, do not reflect the entire U.S. female Ph.D. population.* The proportions of women who indicated such commitments were 67.8 percent in 1976, 72.3 percent in 1981, 73.0 percent in 1986, and 73.5 percent in 1991. (Note: Table S-12 provides proportions of U.S. women with definite commitments by race/ethnicity and field for 1991). Refer to technical note 6 for additional information on postgraduation plans data.

Nonresponses to the question on *type of postdoctoral plans (employment or study)* are excluded from percentage calculations in Tables S-13 and S-14. The table on the next page shows that rates of nonresponse were very low for all racial/ethnic groups. Nonresponse by field in 1991 (applicable only to Table S-14) was also low. The highest rates were in humanities (1.1 percent; N=10) and education (0.9 percent; N=21); nonresponse in all other fields was under 0.5 percent.

13. Tables S-12 to S-16 (continued)

Employment/Study Plans of U.S. Women with Definite Commitments: Nonresponse Rates (%)

	1976	1981	1986	1991
All U.S. Women	1.3	0.2	0.8	0.5
Asians	1.7	0.0	0.9	0.0
Blacks	3.4	0.0	1.7	1.0
Hispanics	3.2	0.7	0.0	0.4
Native Americans	0.0	0.0	3.3	0.0
Whites	1.1	0.2	0.7	0.5
Unknown Race/Ethnicity	0.0	0.7	0.0	0.0

Note: Numbers of U.S. women not reporting type of postdoctoral plans were small: 56 in 1976, 13 in 1981, 51 in 1986, and 41 in 1991. See Table S-13 for total numbers of U.S. women with definite commitments by race/ethnicity. Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

Table S-15 (page 59) and Table S-16 (page 60): As with the other tables on postgraduation plans, Tables S-15 and S-16 do not include the entire cohort of U.S. female Ph.D.s. Rather, they display the *type of employer (i.e., sector) for only those U.S. women who reported definite employment commitments in the United States.* (See page 122 and the table above for rates of nonresponse to the questions on postgraduation status and type of plans; see technical note 6 for additional information on postgraduation plans data.)

Of U.S. women with definite commitments, the proportions reporting employment plans in the United States were 83.4 percent in 1976, 83.3 percent in 1981, 80.1 percent in 1986, and 78.3 percent in 1991. The percentages of blacks, Hispanics, and Native Americans with such commitments ranged from 70 to 95 percent over the years, while those of whites (78 to 83 percent) and Asians (59 to 69 percent) were somewhat lower. The smaller proportions for whites and Asians were most likely a result of their greater concentrations in science fields where postdoctoral study is common.

Nonresponses to the question on *employment sector* are excluded from the percentages displayed in Tables S-15 and S-16. Rates of nonresponse were very low in all years (see table on next page). Nonresponse by field in 1991 (applicable only to Table S-16) was also low. The highest rate was in social sciences (2.1 percent; N=28), followed by professional/other fields (1.8 percent; N=9) and education (1.4 percent; N=31).

13. Tables S-12 to S-16 (continued)

Employment Sector of U.S. Women with Definite Commitments to Work in the United States: Nonresponse Rates (%)

	1976	1981	1986	1991
All U.S. Women	0.6	0.9	1.4	1.3
Asians	0.0	1.5	0.0	0.8
Blacks	0.7	1.5	3.5	1.2
Hispanics	0.0	0.8	2.1	1.6
Native Americans	0.0	0.0	0.0	0.0
Whites	0.6	0.8	1.2	1.3
Unknown Race/Ethnicity	1.7	2.5	4.9	2.0

Note: Numbers of U.S. women not reporting employment sector were small: 23 in 1976, 46 in 1981, 76 in 1986, and 79 in 1991. See Table S-15 for total numbers of U.S. women with employment commitments in the United States. Refer to the second paragraph on page 105 for an explanation of how nonresponse in a tabulation is affected by the *combination* of selected variables.

APPENDIX D

SURVEY OF EARNED DOCTORATES 1990-91

Form Approved
OMB No. 3145-0019
Approval Expires
6/91

This form is to be returned to the GRADUATE DEAN, for forwarding to

The Office of Scientific and Engineering Personnel
National Research Council
2101 Constitution Avenue, Washington, D.C. 20418

Please print or type.

1 Name in full ____________________
Last Name *First Name* *Middle Name*

Cross Reference: Maiden name or former name legally changed ____________________

2 Permanent address through which you could always be reached. (Care of, if applicable) ____________________

Number *Street* *City*

State *Zip Code* *Or Country if not U.S.*

3 U.S. Social Security Number ___ ___ ___ - ___ ___ - ___ ___ ___ ___

4 Date of birth ____________________
Month *Day* *Year*

Place of birth ____________________
State *or Country if not U.S.*

5 Sex
1 ☐ Male
2 ☐ Female

6 Marital status
0 ☐ Single, never married
1 ☐ Married
2 ☐ Separated, divorced, widowed

7 Citizenship
0 ☐ United States, native
1 ☐ United States, naturalized

Non-United States
2 ☐ Permanent Resident of United States (Immigrant visa)
↳ ____________________ *(Country of present citizenship)*
3 ☐ Temporary Resident of United States (Non-immigrant visa)
↳ ____________________ *(Country of present citizenship)*

8 Physical disabilities:
0 ☐ None
1 ☐ No useful sight
2 ☐ No useful hearing
3 ☐ No use of arms and/or legs
5 ☐ Other (specify) ____________________

9 What is your racial background? (Check only one)
0 ☐ American Indian or Alaskan Native
1 ☐ Asian or Pacific Islander
2 ☐ Black
3 ☐ White

10 Are you Hispanic? ☐ No ☐ Yes →
0 ☐ Mexican American
1 ☐ Puerto Rican
2 ☐ Other Hispanic

11 How many dependents do you have? ______ Do not include yourself.
(Dependent = someone receiving at least one half of his or her support from you.)

EDUCATION

12 Location of high school last attended ____________________ *State* *or Country if not U.S.*

Year of graduation from high school ____________

13 List in the table below, chronologically, all colleges (including 2-year colleges) or universities you have attended and each degree earned. Include your doctoral degree as the last entry. List dates attended for each degree earned.

Institution/Branch	State/Country	Years Attended		Field of Study		Degree		
				Use Specialties List			Granted	
		From	To	Name	Number	Title	Mo	Yr

If a baccalaureate degree (or equivalent) was never received, please check box ☐

14 How many years were you a full-time student between receiving your first baccalaureate degree (or equivalent) and receiving your doctorate (include the period spent on your thesis and/or dissertation) ____________ (whole numbers)

15 Identify the field of your doctorate and enter below the title of your dissertation. If a project report or a musical or literary composition is a degree requirement in lieu of a dissertation, please check box ☐ Name of field ____________________

Title ____________________

16 Name the department (or interdisciplinary committee, center, institute, etc.) and school or college of the university which supervised your doctoral program.

Department/Institute/Committee/Program *School*

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(continued on next page)

17. **Please** indicate your **primary** and **secondary** sources of support during graduate study by entering "1" or "2" in the appropriate box. Check (✓) all other sources from which support was received. (Enter only one source as "1" and one source as "2.")

Own/Family Resources
01 ☐ Own Earnings
02 ☐ Spouse's Earnings
03 ☐ Family Contributions

Student Loans
80 ☐ Guaranteed Student Loan (Stafford Loan)
81 ☐ Perkins Loan (includes former National Direct Student Loan)
89 ☐ Other Loan
____
Specify

University-Related
10 ☐ Teaching Assistant
11 ☐ Research Assistant
12 ☐ University Fellow
14 ☐ College Work-Study
19 ☐ Other
____
Specify

Federal Research Assistant
22 ☐ NIH
32 ☐ NSF
52 ☐ USDA
62 ☐ Other Federal
____
Specify

Other Federal Support
21 ☐ NIH Traineeship/Fellowship
29 ☐ Other HHS
33 ☐ NSF Fellowship
40 ☐ Patricia Roberts-Harris Fellowship — Dept. of Ed. (includes former G*POP)
44 ☐ Title VI Foreign Language
49 ☐ Other Dept. Education
60 ☐ Veterans Administration
53 ☐ USDA Fellowship
69 ☐ Other Federal
____
Specify

U.S. Nationally Competitive Fellowships (Non-Federal)
70 ☐ Ford Foundation
71 ☐ Rockefeller Foundation
73 ☐ Mellon Foundation
78 ☐ Other Fellowship
____
Specify

Other Sources
90 ☐ Business/Employer
91 ☐ Foreign (Non-U.S.) Government
92 ☐ State Government
99 ☐ Other

18. When you receive your doctorate degree, how much money will you owe that is directly related to your undergraduate and/or graduate education (tuition and fees, living expenses and supplies, transportation to and from school)?
0 ☐ None
1 ☐ $5,000 or less
2 ☐ $5,001-$10,000
3 ☐ $10,001-$15,000
4 ☐ $15,001 or more

19A. Please check the category that most fully describes your status during the year immediately preceding the award of the doctorate.
0 ☐ Full-time employed → Go to item 19B →
1 ☐ Held fellowship
2 ☐ Held assistantship
3 ☐ Part-time employed
4 ☐ Not employed
5 ☐ Other (specify) _______________

B. If full-time employed, what type of position did you hold?
6 ☐ College or university, faculty
7 ☐ College or university, non-faculty
8 ☐ Elementary or secondary school, teaching
9 ☐ Elementary or secondary school, non-teaching
(11) ☐ Industry or business
(12) ☐ Other (specify) _______________

POSTGRADUATION PLANS

20. How definite are your immediate postgraduate plans?
0 ☐ Am returning to, or continuing in, predoctoral employment
1 ☐ Have signed contract or made definite commitment
2 ☐ Am negotiating with one or more specific organizations
3 ☐ Am seeking position but have no specific prospects
4 ☐ Other (specify) _______________

21. What best describes your immediate postgraduate plans?
0 ☐ Postdoctoral fellowship
1 ☐ Postdoctoral research associateship
2 ☐ Traineeship
3 ☐ Other study (specify) _______________
} Go to Item 22
4 ☐ Employment (other than 0, 1, 2, 3)
5 ☐ Military service
6 ☐ Other (specify) _______________
} Go to Item 23

22. If you plan to have a postdoctoral fellowship, associateship, traineeship, or otherwise undertake further study,

A. What will be the field of your postdoctoral study? Please enter number from **Specialties List.** _______________

B. What will be the main source of financial support for your research?
0 ☐ U.S. Government
1 ☐ College or university
2 ☐ Private foundation
3 ☐ Nonprofit, other than private foundation
4 ☐ Other (specify) _______________
6 ☐ Unknown

Go to Item 24

23A. For what type of employer will you be working?

Education
a ☐ U.S. 4-yr college or university other than medical school
b ☐ U.S. medical school
c ☐ U.S. jr. or community college
d ☐ Elementary or secondary school
e ☐ Foreign institution

Government
f ☐ Foreign government
g ☐ U.S. federal government
h ☐ U.S. state government
i ☐ U.S. local government

Private Sector
j ☐ Nonprofit organization
k ☐ Industry or business
l ☐ Self-employed

Other
m ☐ Other (specify) _______________

B. Indicate what your **primary** and **secondary** work activities will be by entering "1" or "2" in the appropriate box.
0 ☐ Research and development
1 ☐ Teaching
2 ☐ Administration
3 ☐ Professional services to individuals
5 ☐ Other

C. In what field will you be working? Please enter number from **Specialties List** _______________

Go to Item 24

24. Where do you intend to work/study/live after graduation? 0 ☐ in U.S. _______________ *State* 1 ☐ not in U.S. _______________ *Country*

_______________ *Name of Organization, if known* _______________ *City of Organization, if known*

25. What is the highest educational attainment of your mother and father? Please circle.

Father	Less than high school	High school graduate	Some college	Bachelor's	Master's	Professional	Doctorate
Mother	Less than high school	High school graduate	Some college	Bachelor's	Master's	Professional	Doctorate
Codes for office use	1	2	3	4	5	6	7

Signature _______________ Date _______________

If you would like a summary of the results of this survey, please check box ☐

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SPECIALTIES LIST

Instructions: The following field listing is to be used in responding to items 13, 22A, and 23C. If a field marked with an asterisk (*) is chosen in item 13, please write in your field of specialization in the space provided.

AGRICULTURE

000 Agricultural Economics
002 Agricultural Business & Mgmt
005 Animal Breeding & Genetics
010 Animal Nutrition
012 Dairy Science
014 Poultry Science
055 Fisheries Sciences
019 Animal Sciences, Other*
020 Agronomy
025 Plant Breeding & Genetics
030 Plant Path. (See also 120)
039 Plant Sciences, Other*
042 Food Distribution
043 Food Engineering
044 Food Sciences, Other*
046 Soil Chemistry/Microbiology
049 Soil Sciences, Other*
050 Horticulture Science
066 Forest Biology
068 Forest Engineering
070 Forest Management
072 Wood Science
074 Renewable Natural Resources
079 Forestry & Related Sci., Other*
080 Wildlife/Range Management
098 Agriculture, General
099 Agricultural Sciences, Other*

BIOLOGICAL SCIENCES

100 Biochemistry
105 Biophysics
110 Bacteriology
115 Plant Genetics
120 Plant Path. (See also 030)
125 Plant Physiology
129 Botany, Other*
130 Anatomy
133 Biometrics & Biostatistics
136 Cell Biology (See also 154)
139 Ecology
142 Developmental Bio./Embry
145 Endocrinology
148 Entomology
151 Immunology
154 Molecular Biology
157 Microbiology
160 Neurosciences
163 Nutritional Sciences
166 Parasitology
169 Toxicology
170 Genetics, Human & Animal
175 Pathology, Human & Animal (See also 120)
180 Pharmacology, Hum. & Anim.
185 Physiology, Human & Animal
189 Zoology, Other*
198 Biological Sciences, General
199 Biological Sciences, Other*

HEALTH SCIENCES

200 Audiology & Speech Path
210 Environmental Health
215 Public Health (See also 133)
220 Epidemiology
230 Nursing
240 Pharmacy
245 Rehabilitation/Therapeutic Services
250 Veterinary Medicine
298 Health Sciences, General
299 Health Sciences, Other*

ENGINEERING

300 Aerospace, Aeronautical & Astronautical
303 Agricultural
306 Bioengineering & Biomedical
309 Ceramic
312 Chemical
315 Civil
318 Communications
321 Computer
324 Electrical, Electronics
327 Engineering Mechanics
330 Engineering Physics
333 Engineering Science
336 Environmental Health Engin
339 Industrial
342 Materials Science
345 Mechanical
348 Metallurgical
351 Mining & Mineral
357 Nuclear
360 Ocean
363 Operations Research (See also 465, 930)
366 Petroleum
369 Polymer
372 Systems
398 Engineering, General
399 Engineering, Other*

COMPUTER AND INFORMATION SCIENCES

400 Computer Sciences
410 Information Sci. & Systems*

MATHEMATICS

420 Applied Mathematics
425 Algebra
430 Analysis & Functional Analysis
435 Geometry
440 Logic (See also 785)
445 Number Theory
450 Math Probability & Statistics
455 Topology
460 Computing Theory & Practice
465 Operations Research (See also 363, 930)
498 Mathematics, General
499 Mathematics, Other*

PHYSICAL SCIENCES

Astronomy

500 Astronomy
505 Astrophysics

Atmospheric and Meteorological Sciences

510 Atmospheric Physics & Chem
512 Atmospheric Dynamics
514 Meteorology
518 Atmos. & Meteor. Sci., Gen.
519 Atmos. & Meteor. Sci., Other*

Chemistry

520 Analytical
522 Inorganic
524 Nuclear
526 Organic
528 Pharmaceutical
530 Physical
532 Polymer
534 Theoretical
538 Chemistry, General
539 Chemistry, Other* (See 100 Biochemistry)

Geological Sciences

540 Geology
542 Geochemistry
544 Geophysics & Seismology
546 Paleontology
548 Mineralogy, Petrology
550 Stratigraphy, Sedimentation
552 Geomorphology & Glacial Geol
558 Geological Sciences, General
559 Geological Sciences, Other*

Physics

560 Acoustics
561 Atomic & Molecular
564 Elementary Particle
566 Fluids
568 Nuclear
569 Optics
570 Plasma
572 Polymer
574 Solid State
578 Physics, General
579 Physics, Other*

Other Physical Sciences

580 Environmental Sciences
585 Hydrology & Water Resources
590 Oceanography
595 Marine Sciences
599 Physical Sciences, Other*

PSYCHOLOGY

600 Clinical
603 Cognitive
606 Comparative
609 Counseling
612 Developmental
615 Experimental
618 Educational (See also 822)
621 Industrial & Organizational (See also 935)
624 Personality
627 Physiological
630 Psychometrics
633 Quantitative
636 School (See also 825)
639 Social
648 Psychology, General
649 Psychology, Other*

SOCIAL SCIENCES

650 Anthropology
652 Area Studies
658 Criminology
662 Demography
666 Economics
668 Econometrics
670 Geography
674 International Relations
678 Political Sci. & Government
682 Public Policy Studies
686 Sociology
690 Statistics (See also 450)
694 Urban Studies
698 Social Sciences, General
699 Social Sciences, Other*

HUMANITIES

History

700 History, American
705 History, European
710 History of Science
718 History, General
719 History, Other*

Letters

720 Classics
723 Comparative Literature
729 Linguistics
732 Literature, American
733 Literature, English
734 English Language
736 Speech, Debate & Rhetoric
738 Letters, General
739 Letters, Other*

Foreign Languages and Literature

740 French
743 German
746 Italian
749 Spanish
752 Russian
755 Slavic (other than Russian)
758 Chinese
762 Japanese
765 Hebrew
768 Arabic
769 Other Languages*

Other Humanities

770 American Studies
773 Archeology
776 Art History & Criticism
780 Music
785 Philosophy (See also 440)
790 Religion (See also 984)
795 Theatre
798 Humanities, General
799 Humanities, Other*

EDUCATION

800 Curriculum & Instruction
805 Educational Admin. & Supervision
807 Educational Leadership
810 Educational Media
815 Educational Stat. & Research
820 Educational Testing, Eval. & Meas.
822 Educational Psychology (See also 618)
825 School Psychology (See also 636)
830 Social Foundations
835 Special Education
840 Student Counseling & Personnel Services
845 Higher Education Research

Teacher Education

850 Pre-elementary
852 Elementary
856 Secondary
858 Adult & Continuing

Teaching Fields

860 Agricultural Education
861 Art Education
862 Business Education
864 English Education
866 Foreign Languages Education
868 Health Education
870 Home Economics Education
872 Industrial Arts Education
874 Mathematics Education
876 Music Education
878 Nursing Education
880 Physical Education
882 Reading Education
884 Science Education
885 Social Science Education
887 Technical Education
888 Trade & Industrial Education
889 Teacher & Educ. Specific Subject Areas, Other*
898 Education, General
899 Education, Other*

PROFESSIONAL FIELDS

Business and Management

900 Accounting
905 Banking & Finance
910 Business Admin. & Mgmt
915 Business Economics
917 Mgmt. Info. Systems
920 Marketing Mgmt. & Research
930 Operations Research (See also 363, 465)
935 Organiz. Beh. (See also 621)
938 Business & Mgmt., General
939 Business & Mgmt., Other*

Communications

940 Communications Research
947 Mass Communications
957 Communication Theory
958 Communications, General
959 Communications, Other* (See also 736)

Other Professional Fields

960 Architec. & Environ. Design
964 Home Economics
968 Law
972 Library & Archival Science
976 Public Administration
980 Social Work
984 Theology (See also 790)
988 Professional Fields, General
989 Professional Fields, Other*

999 OTHER FIELDS*

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The Appendix tables present data according to the following field classifications. Appendix Tables A-1 and A-2 and Appendix Table B-1 display all subfields that are on the survey Specialties List. Appendix Tables A-4, A-5, and A-6 show data by seven broad fields only. Appendix Tables A-3 and A-7 include the additional field groupings indicated below.

SCIENCES

Physical Sciences (400-599)
Physics and Astronomy (500-505, 560-579)
Chemistry (520-539)
Earth, Atmospheric and Marine Sciences
(510-519, 540-559, 580-599)
Mathematics (420-499)
Computer Sciences (400-410) } Combined in Table A-7

Engineering (300-399)

Life Sciences (000-299)
Biological Sciences (100-199)
Biochemistry (100)
Other Biological Sciences (105-199)
Health Sciences (200-299)
Agricultural Sciences (000-099)

Social Sciences (600-699)
Psychology (600-649)
Economics and Econometrics (666, 668)
Anthropology and Sociology (650, 686)
Political Science and International Relations
(674, 678)
Other Social Sciences
(652-662, 670, 682, 690-699) } Combined in Table A-7

NONSCIENCES

Humanities (700-799)
History (700-719)
English and American Language
and Literature (732-734)
Foreign Languages and Literature
(740-769)
Other Humanities
(720-729, 736-739, 770-799) } Combined in Table A-7

Education (800-899)

Professional and Other Fields (900-999)
Business and Management (900-939)
Other Professional Fields (940-989)
Other Fields (999)

NOTE: Doctorate recipients indicate their fields of speciality. Their choices may differ from departmental names.

TITLES OF RESEARCH DEGREES INCLUDED IN THE SURVEY OF EARNED DOCTORATES

DA/DAT	Doctor of Arts/Arts in Teaching	DMSc	Doctor of Medical Science
DArch	Doctor of Architecture	DNSc	Doctor of Nursing Science
DAS	Doctor of Applied Science	DPA	Doctor of Public Administration
DBA	Doctor of Business Administration	DPE	Doctor of Physical Education
DChem	Doctor of Chemistry	DPH	Doctor of Public Health
DCJ	Doctor of Criminal Justice	DPS	Doctor of Professional Studies
DCL	Doctor of Comparative Law/Civil Law	DrDES	Doctor of Design
DCrim	Doctor of Criminology	DRE	Doctor of Religious Education
DED	Doctor of Environmental Design	DRec/DR	Doctor of Recreation
DEng	Doctor of Engineering	DSc/ScD	Doctor of Science
DEnv	Doctor of Environment	DScD	Doctor of Science in Dentistry
DESc/ScDE	Doctor of Engineering Science	DScH	Doctor of Science and Hygiene
DF	Doctor of Forestry	DScVM	Doctor of Science in Veterinary Medicine
DFA	Doctor of Fine Arts		
DGS	Doctor of Geological Science	DSM	Doctor of Sacred Music
DHL	Doctor of Hebrew Literature/Letters	DSSc	Doctor of Social Science
DHS	Doctor of Health and Safety	DSW	Doctor of Social Work
DHS	Doctor of Hebrew Studies	EdD	Doctor of Education
DIT	Doctor of Industrial Technology	JCD	Doctor of Canon Law
DLS	Doctor of Library Science	JSD	Doctor of Juristic Science
DM	Doctor of Music	LScD	Doctor of Science of Law
DMA	Doctor of Musical Arts	PhD	Doctor of Philosophy
DME	Doctor of Musical Education	RhD	Doctor of Rehabilitation
DMin/DM	Doctor of Ministry	SJD	Doctor of Juridical Science
DML	Doctor of Modern Languages	STD	Doctor of Sacred Theology
DMM	Doctor of Music Ministry	ThD	Doctor of Theology

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